PRINTING EQUIPMENT ENGINEER

- A Technical Publication for Mechanical Executives
- Responsible for Printing Production and the Selection and Care of Printing Equipment and Supplies

SEPTEMBER 1932

no ink mist

● Pressrooms equipped with Goss Presses are brighter and cleaner. The air is free from ink mist. Under such improved working conditions, pressmen find it easier to keep on the alert, to work more efficiently, and to avoid accidents arising from mental fatigue. No matter how long or fast Goss Presses may be run, they do not throw ink.

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AUGUST C. SMITH

The LUDLOW *Puts the Composing Room on Nearly* 100% *Slug Basis*

This statement by the able superintendent of the composing room of The News, New York's Picture Newspaper—a publication with a daily circulation of more than 1,400,000—speaks for itself. August C. Smith says of the Ludlow:

> "Continuous use of the Ludlow equipment in the composing room of The News for thirteen years is my endorsement of the efficiency and economy of the system. We first installed two Ludlows and added two additional machines as the paper grew and our display increased.
>
> "Unlimited type supply and low maintenance cost make the Ludlow an important factor in keeping our page costs at a low figure.
>
> "In laying out the composing room in our new building, we found that the Ludlow enabled us to save considerable floor space, due to the compactness of the equipment.
>
> "The recent installation of 60 and 72-point fonts has placed our paper on a nearly 100% slug basis. A new dress of type for each edition accounts for the clean appearance of The News."

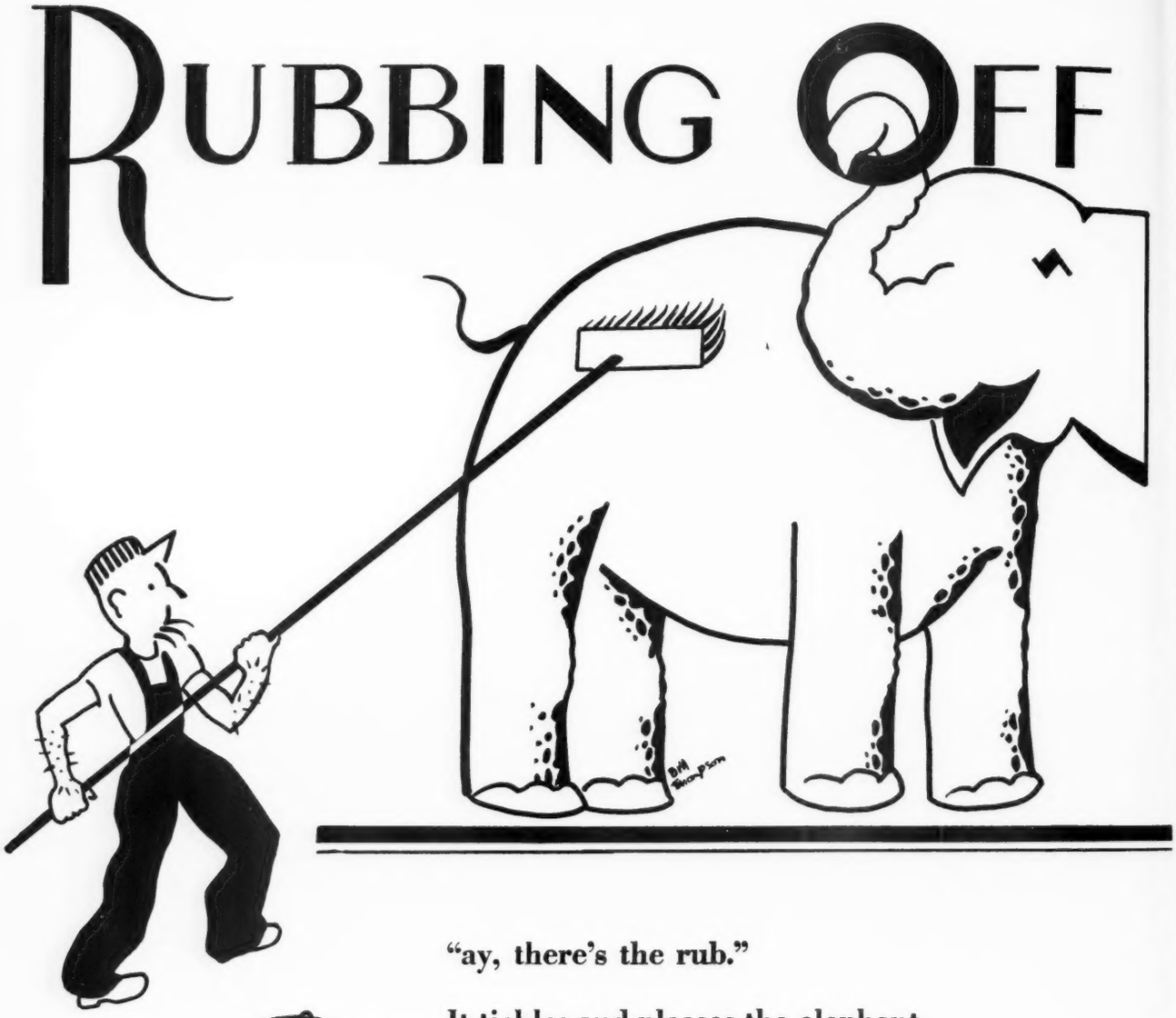
The Ludlow will give you the same advantages in your composing room. Specific information regarding the economies it will effect in your plant awaits your request.

LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue · [Set in Garamond and Garamond Bold] · Chicago, Illinois

September, 1932

RUBBING OFF



"ay, there's the rub."

It tickles and pleases the elephant.

But newspaper publishers and pressmen are not tickled when they have complaints from readers that their ink rubs off.

Columbian Inks do not rub off.

That's one reason why so many newspapers are now using them.

COLUMBIAN INKS

THE L. MARTIN COMPANY

45 East 42nd Street • New York, N. Y.

Arthur S. Thompson, Manager

PRINTING EQUIPMENT ENGINEER

TRADE MARK REGISTERED U. S. PATENT OFFICE. ESTABLISHED 1910

VOLUME 44
SEPTEMBER, 1932
NUMBER 6

W. D. WILL, Publisher

MAC SINCLAIR, Editor

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Let others also read *The Engineer*

After you have read this copy, pass this magazine along to the other men in your organization. They will undoubtedly get helpful ideas from its pages.

Check in left column after reading. Note articles of interest.

☐ *Composing Room Superintendent*

☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

☐ *Superintendent Stereotype Foundry*

☐ *Monotype Department*

☐ *Photo Engraving Department*

☐ *Superintendent Electrotype Department*

☐ *Foreman Lithographing Department*

☐ *Bindery Foreman*

☐ *Production Manager*

☐ *Mechanical Superintendent*

☐ *Manager*

☐ *Purchasing Agent*

PUBLISHED MONTHLY AT
1370 Ontario Street • CLEVELAND, OHIO

EASTERN OFFICE: S. M. Goldberg, Graybar Building, 420 Lexington Avenue, New York, N. Y. Phone, Mohawk 4-5232

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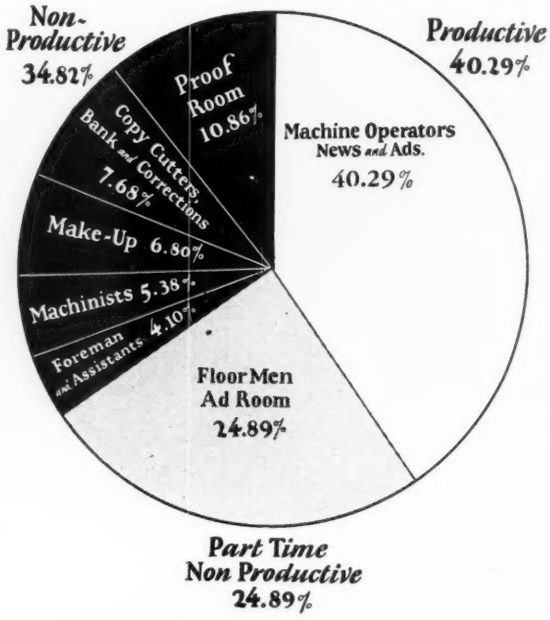
No. 2 of a Series of Advertisements pointing the way to Lower Composing Room Costs

Does A Store Change Cost More Than An Office Correction?

Store Corrections admittedly cost thousands; but nobody knows what Office Corrections are costing.

EVERY foreman is ready to claim how much he could reduce composing room costs, if store changes in advertising proofs were eliminated. Some foremen have statistics to prove that their store change cost as much as $100,000 annually. Few foremen, however, know what it costs to make their own office corrections.

If you will analyze every line of advertising composition reset in your paper, you will find the number of lines reset on account of store changes will be lower than the office corrections on all advertising. Only a limited percentage of advertising is subject to store proofs. And in addition, news composition contains errors.



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Is there any difference in the cost of resetting and rehandling a line of composition marked on a store proof over one marked by your own proofreader? The answer, obviously, is NO.

If thousands of dollars can be saved by eliminating store corrections, why not an equal amount or more by reducing your own office corrections on advertising and news composition?

With the adoption of the Black & White process to your own matrices, we guarantee to reduce errors on your own proofreader's proofs at least 25% before you pay us one cent. Can you afford to ignore this definite, *guaranteed* saving? Write

BLACK & WHITE
Contrast Matrix
"Contrast Provides VISIBILITY"

MATRIX CONTRAST CORPORATION, 33 West 42nd Street, New York

(Sole Licensees of the Percy L. Hill Black and White Patents No. 1466437, held valid by U. S. District Court, Eastern District of New York. Infringers will be vigorously prosecuted.)

PRINTING
EQUIPMENT
ENGINEER
September, 1932

The Pressroom Foreman

By JOHN CLYDE OSWALD*

EVERYBODY in the printing business knows that most proprietors of commercial printing establishments are graduates of the case and press. The proportion is unequal, however; the percentage coming from the composing-room is larger than that from the pressroom. I suppose the reason for the difference lies in the fact that there are more compositors than pressmen in the average printshop.

The period of the "all around" printer has passed. By the term is meant the printer who learned how to work in all departments of the business. It produced the greatest two American printers in our history, Benjamin Franklin in the eighteenth and Theodore L. DeVinne in the nineteenth centuries. They were both compositors and pressmen. In fact, they knew how to perform the duties of not only those two departments, but all the others as well.

DeVinne helped to develop a type face and he wrote much on the making and use of types, but it was to the presswork in which he excelled that he owes his reputation as a fine printer.

The ambitious boy in the pressroom looks ahead to the time when the term of his apprenticeship will be ended and he will be entitled to the rank and pay of journeyman. That distinction achieved, he aspires to a foremanship, with the further prospect of eventually going into business for himself. It is a commendable ambition and one that should be satisfied. Incidentally, it is an ambition that is more apt to be satisfied in America than in any other country. In Europe a few years ago I met the head of the oldest privately-owned printing business in the world, the famous Didot establishment in Paris, which was founded in 1713, and has been in continuous ownership of and operation by members of the same family since that date. The present M. Didot told me that the foremanships in the Didot plant are customarily held and always have been held by members of the same families of workmen. A father is succeeded by a son who in turn is succeeded by his son. It is the highest ambition of a son of a foreman to succeed to the foremanship and when the ambition has been achieved, nothing further is expected. It is seldom that a workman gets out of his groove or beyond his class.

The rules under which an American boy can go along the route successively from apprenticeship to the status of journeyman, foreman, etc., are simple and their operation is sure. Fortunately for him, there are no restrictions imposed by tradition or custom to interfere with his progress from bottom to top.

The first rule is that of intelligent and industrious application to the task in hand. One must work with his hands, of course, but he must also use his head. There is usually a reason for doing a certain thing in a certain way, and the way must be known and followed with careful attention to details. A careless apprentice

(Continued on page 25)

THE FIRST ESSENTIAL

Craftsmanship is a first essential in a pressroom foreman. He must know how to produce the quality of work the establishment requires for its customers. He must himself be able to make-ready a form successfully and within the shortest possible time limits. A foreman cannot know accurately how long it should take to get a press running, unless he can himself, if necessary, make forms ready.

*Managing Director, New York Employing Printers' Association, Inc.; Member American Society Mechanical Engineers.

Springfield, Mo., August 9, 1932.
Printing Equipment Engineer,
Cleveland, Ohio.
Gentlemen:

I receive PRINTING EQUIPMENT ENGINEER every month, and enjoy it very much. Have just read the article, "Foremen, Know Your Costs," and think it is very good. I am especially interested in any hints or suggestions for superintendents or composing room foremen of publication plants.

I wish to thank you at this time for all the helpful instructions received from PRINTING EQUIPMENT ENGINEER.

Sincerely,
Gospel Publishing House,
By E. R. RAMSEY,
Supt. Printing Dept.

The Dry Mat Size Problem

[An Editorial]

Today's mechanical executive is quick to concern himself, not only with administrative and technical problems, but is also eager to suggest possible ways and means for reducing the cost of the materials purchased by his employer which are used in manufacturing printed products.

As the result of a resolution passed by the A. N. P. A. Mechanical Conference at one of its sessions in Cincinnati last June, it is apparent that considerable interest has been aroused and quite a little comment is being made upon the question of reduction in stereotype mat sizes. The discussion is not limited to mechanical executives by any means.

The mat manufacturers have cheerfully responded with information which shows that it is not feasible to reduce the outside dimensions of mats in order to pass the saving to the consumer. The Engineer is in receipt of some illuminating comments from the mat makers. This information points out several reasons for the impracticability of making smaller mats at a corresponding reduction in price. Among the reasons are that while materials cost is a large factor in determining the price of most products, this does not hold true in the case of dry mats, because the cost of manipulation required to manufacture mats greatly exceeds the cost of materials entering into the composition of the mat. The fact that the size of mats has been somewhat standardized has permitted efficiency in manufacturing, trimming, wrapping, boxing, etc., and any variation, such as reducing the size, would increase the manufacturer's inventory and this with the increased handling cost would exceed the slight saving secured in materials cost. It is also pointed out that unless it were possible to standardize on one definite size smaller than 20 in. by 24 in. no saving in cost of producing mats is possible. To attempt to supply mats of different sizes to newspapers would so interfere with manufacturing production as to cause an increase in cost.

In support of his contention that manipulation cost exceeds materials cost, one mat manufacturer writes as follows:

> One of the first problems we were confronted with in the economical production of mats was that there was 33 1/3% more material used in our 0.032 in. caliper mat than our 0.024 in. caliper mat. You can appreciate it was necessary that we give careful consideration to the matter of price of the various calipers. A study of our costs showed, however, that the costs of materials were such that it would be difficult to prepare a sliding scale of prices according to caliper or materials cost. We therefore made one price for all calipers of this brand of mat.

A minor objection which might develop into a major obstacle so far as manipulation of mats in the stereotype foundry is concerned, is noted. The use of a mat of smaller area would impede manipulation in the stereotype department because it would be necessary to exercise more care when centering the mat on the form. A certain amount of mat margin is required for seating the tail piece properly in most casting boxes. Narrowing the mat might cause some expensive operating or mechanical complications to arise.

A note on standardization in the size of dry mats is struck by another manufacturer who states:

> Unless it were possible to standardize on one definite size smaller than 20 in. by 24 in. no saving in cost of producing mats is possible. To attempt to supply mats of different sizes to different newspapers would so interfere with manufacturing production as to make a material increase in cost.
>
> On the other hand, if a sufficiently large percentage of newspapers could use a mat smaller than 20 in. by 24 in., there would be a saving in material only. The fixed overhead, the number of mats produced per machine, and the labor costs would all remain the same. The only saving would be in the actual raw material, and the cost of this in respect to the total cost of the mat is relatively small. The cost of the mat depends more upon the manipulation of the materials used and any saving through a smaller-sized mat would be so little that it could hardly be passed on to the customer. Our machines (and we believe the same is true of the other manufacturers) were built to make an untrimmed sheet which cuts to size 20 in. by 24 in., and to run mats of other sizes would mean rebuilding these machines. In view of the fact that mat making is a continuous process running 24 hours a day, any attempt to rebuild the machines even if such a thing were feasible, would mean shutting up the plant or building new machines and scrapping those on hand. This would be a very expensive proposition.

In last year's August-September issues, the Engineer printed an address delivered by Jackson Townsend before the A. N. P. A. Mechanical Conference at Washington, in which it was explained that what the dry mat manufacturers and the newspaper publishers through their mechanical executives really need is further standardization (of dry mats) instead of diversification. The impression obtained from Mr. Townsend's address indicates that if the consumers would agree upon a standard thickness and standard moisture content as well as a standard size, the mat maker could talk in terms of reduced cost and reduced price. Even though all papers might not be able to use exactly the same thickness or the same moisture content, and if these variables could be reduced to two or three instead of a multitude, the saving would be appreciable and perhaps all the dry mat manufacturers would be glad to pass this saving to the consumer.

The lack of standardization, it is stated by one mat maker, is the nemesis of the dry mat manufacturer. We quote as follows:

> Every mat user would no doubt be astounded if he could know the limitless number of variations of thickness and moisture content and of the special specifications required by various customers. In thickness the

range is all the way from 0.022 in. to 0.036 in. and in moisture content from 10½% to 18%. These two variables in themselves give a countless number of combinations which in turn are complicated by the fact that all tabloid newspaper executives demand mats cut in the opposite direction. If we should have another variable, viz., that of size, it would literally throw the dry mat manufacturing into a hopeless jungle of combinations.

The one ray of light which has shown in this mass of individual opinion has been the standard size (20 in. by 24 in.) for about 98% of the dry mats. Through this single standardization we have been able in turn to standardize machine units, organize labor operations and to a certain point carry the process through a uniform procedure. Eliminate the standard size and every mat from pulp to foundry must be a tailor-made proposition built upon the particular specifications of each individual publisher or stereotyper.

It is probably true that about 40% of the newspaper executives could reduce the size of their dry mats to a varying amount, some in width, some in length and some in both dimensions but the amount of saving of raw materials made available through this reduction in size would be completely lost in the complications and added costs which would arise through the diversification. We would not by choice eliminate the present near-standard size of dry mats even if we could make a reasonable additional charge. The complications, the nuisance and the horror of the thing are too great to be reckoned in terms of cost.

It would seem that the varying specifications of the individual user at the present time defeats any saving in price which could be allowed by the manufacturer if he were permitted to make a standardized product.

Apparently the problem of a reduction in the cost of dry mats lies in the direction of attempting to influence the user to agree upon standardized mat specifications. Might the ENGINEER suggest that the A. N. P. A. Mechanical Department, through its able manager, W. E. Wines, would find this a very interesting endeavor, the ultimate accomplishment of which would benefit that section of the printing and publishing industry which employs the stereotype process. Perhaps it is an educational problem, the ground work for which should be laid at the present time. Certainly, advices from the manufacturer indicate that he would be willing to go along whole-heartedly with such a program.

Intertype Has a New Branch Office

On July 1 the stock and equipment of the Los Angeles sales office of Intertype Corporation at 1220 So. Maple Ave., was increased and is now equipped to serve the printing trade as a regular branch office of the Corporation.

The new branch office now carries a complete stock of Intertype parts and supplies for quick shipment to its patrons in lower California and Arizona.

Elmer H. Hostetler

Elmer H. Hostetler, who has been in charge of the Los Angeles sales office for 15 years, has been promoted to the position of branch manager.

Mr. Hostetler maintains at this new office a well-appointed display room where may be seen all of Intertype's recent inventions, including the Quadding and Centering Device, New Magazine Shift, Model F Mixer, Model G 72-90 Channel Text-Display Mixer and the Extra Wide Tooth Intertype Matrix.

Attuning Your Mind to Present Conditions

JOSEPH T. MACKEY, Executive Vice President of the Mergenthaler Linotype Co., recently issued a statement which contemplates putting the executive mind in its proper attitude toward today's business conditions.

Part of Mr. Mackey's statement is as follows:

> Let's be done with the vain hope of bringing back the prosperity of early 1929. We want to look forward to a New Prosperity that will be more substantial and lasting. Let's stop our wishful waiting for miracles. Business got itself into a jam and business must pull itself out. The New Prosperity can be created only through the efforts of those to whom business has intrusted its responsibilities—its directors, executives, foremen, engineers. We must all have the courage to face the fact that the old landmarks are gone; that the old formulas won't work any more, that precedents are dangerous and the knowledge won of hard experience may be all wrong under today's conditions.
>
> We have been, and still are, too much concerned with fictitious values. We need to refresh our thinking by contact with facts. The biggest fact we can wrap our minds around is that 125 million people in this country need to be fed, clothed, housed and provided with radios, automobiles, toothbrushes, books and newspapers. That is the only basis for real prosperity.

A. S. M. E. Member Named On Committee

Edward Epstean has been named by The American Society of Mechanical Engineers as its representative on the American National Committee for International Congresses of Photography, which will meet in Paris in 1934. This appointment was confirmed by the Executive Committee on July 29.

These congresses meet every three years and attention is centered on all of the scientific aspects of photography and their application. The material presented to the congresses is grouped under these headings: Theoretical aspects of photography, photographic practices, photoengraving, color photography, and cinematography. An important function of these congresses is to consider standardization questions.

Mr. Epstean is president of the Photoengravers' Board of Trade of New York and treasurer of the Walker Engraving Corporation, New York.

Handling Newsprint—Its Economy

Courtesy SCRIPPS-HOWARD NEWSPAPERS*

The first installment of this treatise on newsprint handling methods appeared in the August ENGINEER. John L. Blake, Assistant Manager, Scripps-Howard Supply Co., Cincinnati, Ohio, was erroneously given credit for authorship in the August installment. The treatise was made up from suggestions submitted by the press crews of the Scripps-Howard Newspapers. It represents a compilation of the ideas and methods of the men who handle newsprint in that organization and is not the work of any one individual.—*Editor.*

STORING rolls on sides has many advantages over storing on end. While it is true that rolls can be changed from a vertical to a horizontal position without damage if proper equipment is used, it takes extra effort to do so, which tends towards rough handling and carelessness.

As most all rolls are unloaded from cars and trucks on sides, it is good practice to keep them this way all through the handling operation. The loss in storage space will be small—the saving in damage large. However, don't permit the rolls to be rolled around warehouses or pressroom—insist on the use of trucks or dollies.

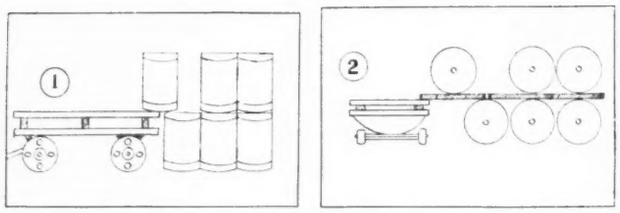


Fig. 10—The above truck, made by a local blacksmith for $20, is adaptable for unloading upper decks of rolls from freight cars as at 1, or for putting rolls on or taking them off of the second tier in storage, as at 2. It is necessary to use either inclined horses or an elevator with this truck.

To handle paper on the side you will probably need inclines as shown in Figs. 5 and 8 (August ENGINEER); some sort of runways to facilitate handling and protecting rolls from water (the concrete runways shown in Figs. 8 and 9, August ENGINEER are excellent); a truck similar to the one in Fig. 10 for the second tier. If you are going to store more than two tiers high you will need a portable elevator.

Don't permit paper to be stored in drafty, excessively hot, cold or wet rooms. Don't permit windows or doors to be left open on wet days or when a draft is moving through the room. Observation of these ideas will save trouble on the presses.

During cold weather, store paper for several days in the room in which it is to be printed. This will condition it and eliminate trouble with static.

HOW TO FIND CAUSES OF DAMAGE

In seeking causes for newsprint waste, start with your own methods of handling newsprint, and those of the trucking concern taking delivery from car or boat. Through long experience, newsprint manufacturers have become expert in the production and packing for shipment of newsprint in rolls. Rough handling by railroads or improper loading at mills is a less likely cause for damage than carelessness or ignorance by your own paper handlers.

Check these points:

1. Are cars arriving in good condition?
   (a) Have toe blocks or braces been loosened (indicating rough handling in transit or improper securing of blocks or braces to car by mill).
   (b) Have all protruding nails been removed, covered with layers of paper or been driven in?
   (c) Have bolt heads and other obstructions been properly padded?
   (d) Are edges of door posts padded?
   (e) Is there anything on the floor, such as splinters, loose nails or stones that might damage the rolls?
   (f) Have the rolls shifted enough to damage them? (Indicates rough handling by railroads or improper loading at mill.)
2. Is the unloading crew using care and proper equipment?
   (a) Do they have a prying paddle with a free-moving shoe, and are they using it horizontally (not at an angle)?
   (b) Does their truck have a movable iron shoe for protecting the edges of rolls when they are pulled over?
   (c) Do they let rolls drop *anywhere* without full support?
3. Are there any obstructions on the motor truck which might damage rolls? (Trucks often have protruding nails, bolts, angle irons, cross irons, uprights, sharp edges on sides or back of driver's seat which will cut rolls.)
4. If a chute is used, does it have any protruding bolts or supports that might be cutting rolls? (This has been found frequently.)
   (a) Do rolls hit an obstruction at the end of the chute? If so, slow them down by putting resin on the chute.
5. Check the warehouse for the above points.
6. Check your own storage and press room for the above points.
7. For boat shipments, observe if rolls hit hatchways or sides of boat while they are on hoists, and whether they are let down easily and squarely.

Fig. 11—This truck has an advantage over the other one shown, in Fig. 12, in that the two additional casters enable handlers to push it with ease, instead of carrying it, for great distances. A local blacksmith made it for $48.

CAUSES OF DAMAGE TO NEWSPRINT

Flat Rolls or Crushed Cores: If as they stand in cars, attributable to rough handling or shifting in transit. If after

*Copyright 1932, Scripps-Howard Supply Co., Cincinnati, Ohio.

removed from cars, rolls have been dropped in unloading and handling. Paper mills can only wind rolls absolutely round.

Cuts at Top Edge of Rolls: Unprotected nails, bolts and other protruding obstacles in freight cars; rolls being dropped so that head strikes first; protruding supports and bolts in paper chutes; sharp obstacles on motor trucks; rolls striking obstructions at end of chute.

Cuts on Side of Roll: Unprotected nails, bolts and other protruding obstacles in freight cars and on motor trucks; prying paddles being used at an angle instead of horizontally, dropping on tire casings, whether they have or do not have rims in them; rolling over unclean, uneven or splintered floors.

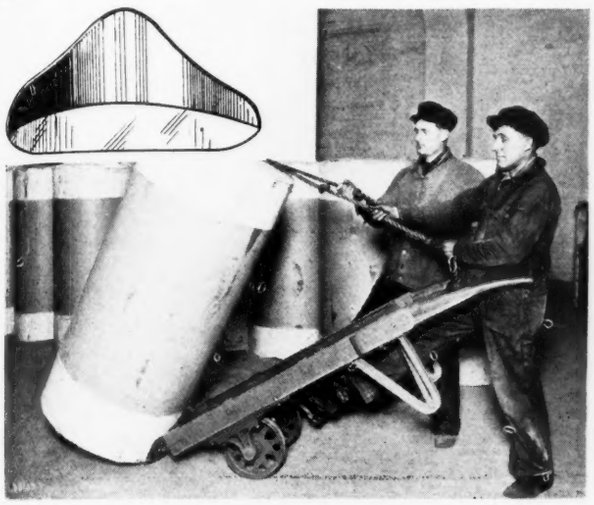


Fig. 12—A fine commercially manufactured truck. Cost, about $85. The shoe shown in the inset protects edges of rolls when tilting in places where it is impossible to use trucks. A thick mat for rolls to fall on must be used with these shoes.

Cuts at Bottom Edge of Roll: Rolls sitting on unclean or splintered car floors; riding toe blocks or braces; cut by protruding nails and bolts in cars or on trucks; rolls being changed from vertical to horizontal positions, or vice versa, without use of a protecting movable iron shoe on truck; rolls being dropped unevenly so that bottom edge strikes first; shifting in transit; rolls being rolled across unclean, uneven or splintered floors.

Rolls Cracked from End to End: Usually attributable to being dropped over sharp edges of platforms, trucks, etc.; sometimes due to tight winding and absorption of moisture.

KEEP THE MEN INTERESTED IN ELIMINATING DAMAGE

Whenever damaged newsprint is received at the plant of one publication we know of, the mechanical executive calls the crew which he believes to be responsible to the pressroom to show just how much trouble the damage is causing.

While the negligent crew is in the pressroom, the man responsible for handling the publication's newsprint, shows the crew men how to handle it properly. This is an object lesson that does more good than just calling the boss handler down by telephone, letter or in person. Remember that the offending crew may be the unloaders at the car, the handlers at the warehouse, truckmen or your own handlers.

Appoint someone in the office responsible for damage to newsprint, and have this party familiarize himself with the proper methods for handling it. Then have him train everyone that has anything to do with handling newsprint from the car to the press spindles.

Have this man become acquainted with the local representatives of all of the railroads that haul the paper. These railroad men can help a lot in eliminating rough handling of cars while en route.

A lot can be learned by making unannounced trips occasionally to the car unloading platform, to the warehouse or to the storage room in the building. The men that handle paper can often make good suggestions about loading cars so that unloading will be facilitated, about the way rolls are wrapped, about blocking, equipment, etc. Besides, they will do a better job if they know somebody is interested in their work.

Train your own paper handlers to be alert in detecting damage in rolls as they are delivered. This will enable you to collect for damages from the warehouse, truckmen or railroad. The big advantage to be had from this idea, though, is that you can hold your men responsible for all visible damage that they do not report when the rolls are received into the building.

Keep *everybody* concerned with your paper handling informed as to whether the damage is increasing or decreasing. Also point out to them damage records from other cities.

But above all, see that your paper handlers are properly trained and that they have the proper equipment.

Depth of Cut	Sheets Cut	Reduces Diameter	Diameter of Rolls in Inches 27″	28″	29″	30″	31″	32″	33″	34″	35″
1/8″	36	1/4″	.0188	.0181	.0175	.0169	.0163	.0158	.0153	.0149	.0144
1/4″	72	1/2″	.0375	.0361	.0348	.0337	.0325	.0315	.0305	.0296	.0287
3/8″	108	3/4″	.0560	.0340	.0520	.0503	.0486	.0471	.0456	.0442	.0430
1/2″	143	1 ″	.0743	.0716	.0691	.0667	.0645	.0625	.0608	.0588	.0571
5/8″	215	1 1/2″	.1105	.1064	.1027	.0993	.0960	.0930	.0902	.0875	.0850
1 ″	286	2 ″	.1459	.1406	.1358	.1312	.1270	.1230	.1193	.1158	.1125
1 1/4″	358	2 1/2″	.1806	.1742	.1682	.1626	.1574	.1525	.1479	.1436	.1396
1 1/2″	429	3 ″	.2146	.2070	.2000	.1934	.1873	.1815	.1761	.1711	.1663
1 3/4″	501	3 1/2″	.2479	.2393	.2312	.2237	.2167	.2101	.2039	.1980	.1925
2 ″	572	4 ″	.2805	.2708	.2618	.2534	.2455	.2381	.2311	.2246	.2184
2 1/2″	715	5 ″	.3436	.3320	.3212	.3111	.3016	.2927	.2842	.2763	.2688
3 ″	858	6 ″	.4039	.3906	.3782	.3665	.3556	.3452	.3355	.3263	.3176

Percentage of total volume, weight or value of standard newsprint in rolls, represented by cuts of various depths, as shown by count of sheets

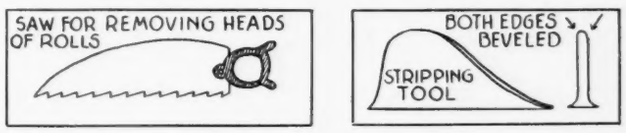


Fig. 13—A handy and efficient instrument (stripping tool) for removing wrappers and damaged layers of paper, as well as for stripping cores can be made by your own press crew. Furnish the crew with a piece of hard wood, about 1/2 in. thick, 3 in. wide and 6 in. long. The wood is trimmed to a flat and sharp point on the front end. After the instrument is formed, it is soaked in oil for several days.

PREPARING ROLLS FOR PRESSES

The press crew should be cautioned to roll rolls in the direction in which they are wound.

Wrappers are put on rolls for protection. Do not remove them until the roll is on the press and spindled. Even then, do not remove the wrapper until ready to splice the roll. Pressroom waste is materially increased when rolls lie around without protecting wrappers. Trucks and shafts batter them, men sitting on them and dirty hands soil them.

Of course, the heads should be removed before putting in the shaft. Some publications use a knife and some a saw for removing heads. The saw seems to be the best tool for the purpose. Any cheap saw will do. Cut it to about a 20 in. length and grind the nose to a curve as shown in Fig. 13.

Have a pressman wipe all brake pulleys with an oily wiper—especially those that have come from a section that have been carrying enough tension to cause the blocks to smoke. This gives rolls a smooth start and removes the gummy substance from brake pulleys.

(Continued on page 28)

Third Progress Report on Study of News Ink and Newsprint

By B. L. WEHMHOFF*

This is the second and final installment of the Third Progress Report on the Study of News Ink and Newsprint conducted under the supervision of B. L. Wehmhoff at the Government Printing Office, Washington, D. C. The report is based on cooperative research sponsored by the Mechanical Department of the A. N. P. A. and the Division of Tests and Technical Control at the Government Printing Office. The two installments represent an abstract of Mr. Wehmhoff's paper delivered at the A. N. P. A. Mechanical Conference, Cincinnati, Ohio, June 7, 1932.—*Editor.*

A STATEMENT was made in last year's report that the use of the lower grades of rosin in the manufacture of news ink increased the "strike through." The theory was advanced that this was due to impurities in the rosin rather than to the rosin itself. In order to determine if this was true, eight representative samples of the different grades of rosins were obtained and made into news inks for test.

Four of the samples were gum rosins, of which one was grade B, a low quality, two, grades I and H, were of medium quality, and the fourth WG, was a high-grade rosin. The remaining four samples were wood rosins—two were grade FF, of low quality; one, grade M, was of medium quality; and one, grade X, high quality. A ninth sample, a special lime-treated wood rosin, was included in the tests. Each rosin was heated with an equal weight of a specially treated nonstaining news-ink oil for one hour at 90° to 100° C. to form a rosin-oil varnish which was used in the manufacture of test inks. Eighteen inks were made using 5 and 10 per cent of each varnish, the remaining constituents of the ink being in each case 10 per cent of news-ink grade carbon black, and 85 and 80 per cent, respectively, of the same specially treated oil used in making the varnish. Specific gravity and viscosity tests and comparative draw outs were made of each ink.

Per cent of rosin in ink	Type of rosin	Grade of rosin	Specific gravity of ink at 25° C.	Viscosity of the ink (poises) at — 25° C.	37.7° C.
No rosin			0.9718	29.1	21.8
		FF	.9465	37.4	27.6
2.5	Wood	FF*	.9758	72.3	59.3
	Rosin	M	.9495	47.3	39.5
		X	.9575	41.6	31.2
		B	.9609	55.1	40.6
2.5	Gum	H	.9681	42.1	30.2
	Rosin	I	.9630	51.0	36.9
		WG	.9792	49.9	34.8
2.5	Lime-treated rosin		.9753	52.5	43.2
		FF	.9650	71.8	61.3
5	Wood	FF*	.9770	71.8	58.8
	Rosin	M	.9664	47.2	38.0
		X	.9693	45.2	34.8
		B	.9709	64.5	51.5
5	Gum	H	.9737	53.0	40.6
	Rosin	I	.9797	61.9	44.7
		WG	.9699	48.4	35.4
5	Lime-treated rosin		.9848	75.4	62.4

*This rosin was specially treated in the course of manufacture to render it more readily soluble.

Table II

Varnishes.—a. The higher grades of rosin dissolved more readily and rapidly, yielded thinner and lighter colored varnishes, and showed less tendency to crystallize from the varnishes than the lower grades.

b. Regardless of grade, wood rosins have apparently less tendency to crystallize from the varnish than gum rosins.

Strike through.—a. No appreciable difference was noted in any case between inks containing 5 per cent varnish and those containing 10 per cent.

b. During the first week after the draw outs were made the inks containing the lower grades of rosin showed more stain than the inks containing the better grades. Three weeks later the difference in stain between the inks made from the two types of rosins could not be noticed; that of the inks containing low-grade rosins had evidently been absorbed by the fibers of the paper to such an extent that the "strike through" was no more evident than in the case of the other inks.

EFFECT OF ROSINS ON THE STRENGTH OF THE INK

When the same percentage of pigment is used, the grade of rosin used in the varnish has no effect on the strength of the ink.

EFFECT OF ROSIN ON THE SPECIFIC GRAVITY AND VISCOSITY OF THE INK

Table II shows no definite effect of various types and grades of rosins on the specific gravity and viscosity of the finished inks. The consistency of an ink containing rosin is, of course, greater than that of a similar ink made without rosin.

The experiments were repeated, using another type of oil. Varnishes were made containing 50 per cent rosin, the remainder being a dark-colored staining oil. These varnishes were incorporated in another series of inks, tests on which gave the following results:

Varnishes.—The same relation existed with staining as with nonstaining oils, that is, the lower grades of rosins were more difficult to dissolve and showed a greater tendency to settle out or crystallize than did higher grades.

Strike through.—a. The "strike through" of low-grade rosins is accentuated if a staining oil is used to dissolve the rosin and also used as vehicle for the ink.

b. The "strike through" is slightly less when high-grade rosins are used with staining oils than when the staining oil is used as vehicle without rosin in the ink. In this case the nonstaining rosin apparently dilutes the staining constituent of the oil.

These tests indicate that the benefits resulting from the use of rosin in news ink may possibly be obtained more cheaply by other means. Definite conclusions can not as yet be reached as to the effect of rosins on all of the physical properties of news inks. Rosins are apparently used in news inks to decrease "strike through" or to increase the consistency of the ink. Our tests indicate that to decrease the "strike through" it is necessary to use highest-grade rosins and even then the decrease would be slight. It would be preferable to decrease "strike through" by using a nonstaining oil. If increased consistency of the ink is required, the desired result can probably be more cheaply obtained by the use of a higher viscosity oil rather than by the use of rosins. Insufficient work has been done to warrant a definite statement that a heavy-bodied, nonstaining oil will yield an ink having satisfactory flow. If it is found that such an oil can not be pro-

*Technical Director, Government Printing Office, Washington, D. C.

duced commercially, the use of rosin as a "bodying" agent would be warranted.

SETTLING OF NEWS INKS

Tests were conducted to determine which of the two methods commonly used in the manufacture of news inks yields the more stable ink, and which would settle the least on long standing in storage.

Samples of each ink were allowed to stand undisturbed in graduated glass cylinders for six months, at the end of which time samples were taken from the top and bottom of each cylinder and analyzed for pigment content. Results of analyses are shown below.

Type of manufacture	Top of cylinder	Bottom of cylinder
Ground	11.2 per cent pigment	11.1 per cent pigment.
Ground and blended	7.5 per cent pigment	12.2 per cent pigment.

Table III.—Analysis of ink from top and bottom of containers after six months' storage.

These tests show no tendency of the ground ink to separate. The ground and blended ink, however, appears to be an unstable suspension and to have a marked tendency to separate on standing.

FACTORS INFLUENCING PRINTING QUALITIES OF NEWSPRINT PAPER

In last year's report seven factors were listed which might influence the printing qualities of newsprint paper, and the effect of varying fiber composition on printing results was discussed.

A study was made of the comparative smoothness of a number of samples of newsprint, and some work was done on the effect of calendering on the printing quality.

MEASUREMENT OF THE SURFACE OF NEWSPRINT PAPER

Visual examination of well and poorly printed papers led to the conclusion that the best printing results on newsprint could be obtained with a sheet having a good formation and an even and smooth surface obtained without excessive calendering.

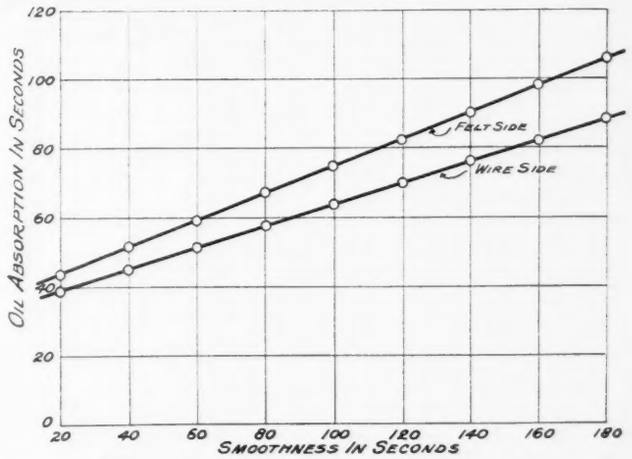
Smoothness controls to a large extent the amount of ink required to print a paper correctly, the evenness with which the ink covers the paper, and the extent to which the ink oils will penetrate the paper.

Many attempts have been made to devise methods for measuring the smoothness of the surface of paper. Actual printing tests showed that glarimeter tests have but little relationship to the quality of printing on newsprint paper.

As reported last year, efforts were made to devise a test that would give an indication of the results that might be expected on the press. Various "ink coverage" methods were tried. Other methods were suggested and tried—such as applying a crayon or soft, waxy material under slight pressure to a moving sheet of paper, or applying a film of ink by contact of the paper to be tested with a sheet of coated paper that had previously been inked. However, none of these tests gave satisfactory results.

An instrument invented by Dr. Julius Bekk, of the Ullstein Printing Office, Berlin, Germany, was obtained and found to give satisfactory results. The apparatus is simple in principle and in operation. The smoothness of a paper surface is measured in terms of the number of seconds required for the passage of 10 cubic centimeters of air across 10 square centimenters of the paper surface when held under a definite weight, with controlled conditions of vacuum, temperature, and relative humidity. Numerous tests show a wide variation in readings between smooth and rough papers. Differences are also shown between the felt and wire sides of the same sheet.

Over 500 tests made on commercial newsprint samples sent in by various members of the American Newspaper Publishers' Association gave an average reading of 72 seconds for the wire side and 85 seconds for the felt side. Since no definite standards for smoothness have been adopted, the samples sent in for tests have been reported in comparison with these average figures. Due to incomplete operating instructions being

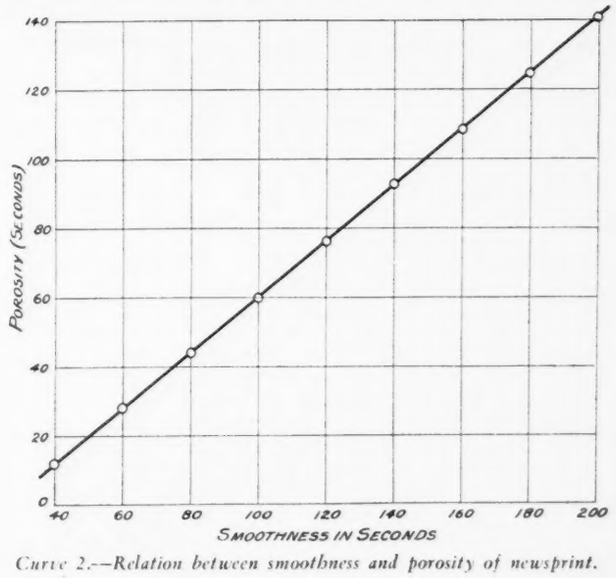


Curve 1.—Relation between smoothness and oil absorption of newsprint.

received with the smoothness tester, the first tests were made with too much weight on the paper, resulting in the figures obtained being too high. These data have been used in this report and also in the comparisons reported to members. It has been found that a correction factor of 60 per cent will reduce these figures to approximately the correct readings.

RELATIONSHIP BETWEEN SMOOTHNESS OF SURFACE, RATE OF OIL ABSORPTION, AND POROSITY

A comparison of smoothness, oil absorption, and porosity tests shows some relationship between the three. Curve I is a weighted average curve showing the relationship of smoothness and rate of oil absorption. One thousand tests were made

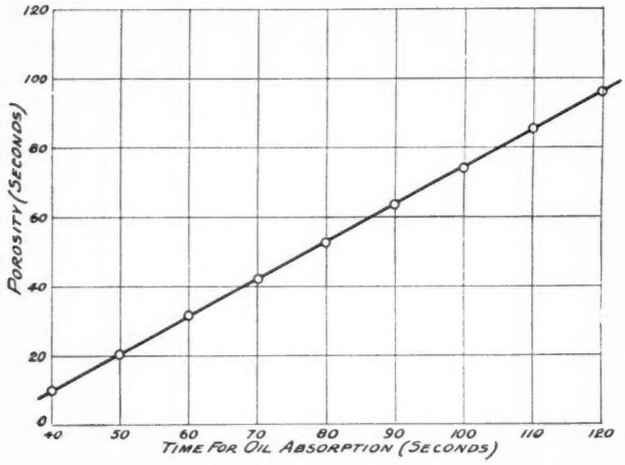


Curve 2.—Relation between smoothness and porosity of newsprint.

in each case. This curve shows that as paper increases in smoothness, it is less easily penetrated by oil. Curve II shows that as the smoothness of the sheet increases the porosity decreases. Curve III, a weighted average curve of porosity and rate of oil absorption tests, shows that as the porosity decreases the time required for oil absorption increases.

Smoothness, porosity, and oil absorption tests are all reported in seconds, as in each case the time consumed is either a direct or reverse measure of the characteristic being tested.

As previously stated, the smoothness of paper surfaces is measured in terms of the number of seconds required for a definite volume of air to pass over a definite area of the paper



Curve 3.—Relation between oil absorption and porosity of newsprint.

surface under controlled conditions. The time required increases with increasing smoothness.

Porosity of paper is measured by the number of seconds required for a definite volume of air to pass through a definite area of paper under controlled conditions. As the porosity decreases the amount of time required is increased.

Oil absorption is measured in terms of the number of seconds required for saturation of a sample of the paper with oil under controlled conditions. As the resistance of the paper to oil increases the time required for saturation likewise increases.

All tests were made at a temperature of 70° F. and a relative humidity of 50 per cent. Smoothness, oil absorption, and porosity tests were made on several special samples of paper in an effort to determine whether increased calendering of newsprint would cause a corresponding increase in smoothness, resistance to oil absorption, and impenetrability to air. The samples included the eight special samples of newsprint mentioned in last year's report containing various percentages of bleached and unbleached sulphite and ground-wood pulps, and also two commercial newsprint samples, one having a high degree of smoothness and the other being quite rough. All samples were subjected to varying amounts of calendering on the Bureau of Standards calender stack, after which smoothness, rate of oil absorption, and porosity tests were made.

A study shows that with but four exceptions, the smoothness increased regularly with the amount of calendering. On the other hand, after the first "nip" on the calender stack the resistance to oil was not increased appreciably by further calendering. In fact, in some instances it was decreased slightly. This indicates that the formation of the sheet rather than mechanical smoothing or closing up of the surface of the paper regulates the rate of oil travel from the ink.

No definite conclusions were reached as to the effect of calendering on the porosity of newsprint paper. In the case of paper made from 60 per cent unbleached sulphite pulp and 40 per cent ground-wood pulp, the porosity increased with the amount of calendering. In two other cases the porosity increased with the first "nip" on the calender stack, but remained practically constant thereafter. In the other tests the porosity decreased with increased calendering.

These tests indicate that calendering newsprint paper affects the smoothness to a considerable extent and improves the printing quality in that it furnishes a smoother surface. Excessive calendering might possibly have an adverse effect by increasing the time required for initial absorption of the oil. This would tend to cause the ink to remain on the surface, resulting in offset or smut, or the oil from the ink might spread laterally to form a halo around the printed letters or half-tone dots.

RATE OF DETERIORATION OF NEWSPRINT PAPER

A series of comparative tests were made to determine the effect of storage of newsprint paper on its strength and other characteristics, with particular reference to the rate of deterioration of paper of varying fiber composition.

Tensile strength, bursting strength, and oil-absorption tests were made within 10 days after manufacture of the special samples of newsprint mentioned in last year's report. The tests were repeated at the end of six months and again after 12 months' storage. The rolls were stored unwrapped on the fifth floor of the Government Printing Office under normal atmospheric conditions. They were kept on end, well separated from each other and exposed to light from nearby windows. Two laps were removed from the rolls before the samples were taken. The samples were conditioned for at least 12 hours at 50 per cent relative humidity and 70° F. before being tested.

The results of the tests are given in the following tables:

Composition	Test No.	Tensile strength — kilograms per 15-millimeter strip					
		Machine direction			Across machine direction		
		0 months	6 months	12 months	0 months	6 months	12 months
100 per cent ground wood	61529	2.62	3.65	3.37	2.11	2.48	2.40
80 per cent ground wood, 20 per cent unbleached sulphite	61530	3.95	4.20	4.87	2.41	3.07	2.81
60 per cent ground wood, 40 per cent unbleached sulphite	61531	5.03	4.17	5.64	2.77	2.78	3.07
40 per cent ground wood, 60 per cent unbleached sulphite	61532	6.67	6.22	6.77	3.39	3.52	3.72
80 per cent ground wood, 20 per cent bleached sulphite	61533	2.87	3.36	3.85	1.73	2.20	2.26
60 per cent ground wood, 40 per cent bleached sulphite	61534	3.50	4.13	3.80	2.20	2.55	2.22
40 per cent ground wood, 60 per cent bleached sulphite	61535	4.23	4.24	4.19	2.39	2.76	2.61

Table IV.—Effect of storage on tensile strength of newsprint.

Paper composition	Test No.	Bursting strength		
		0 months	6 months	12 months
		Points	*Points*	*Points*
100 per cent ground wood	61529	10.6	12.5	12.8
80 per cent ground wood, 20 per cent unbleached sulphite	61530	13.3	15.0	17.3
60 per cent ground wood, 40 per cent unbleached sulphite	61531	19.2	19.2	19.9
40 per cent ground wood, 60 per cent unbleached sulphite	61532	24.7	22.7	25.7
80 per cent ground wood, 20 per cent bleached sulphite	61533	9.9	11.1	16.3
60 per cent ground wood, 40 per cent bleached sulphite	61534	12.8	15.0	16.3
40 per cent ground wood, 60 per cent bleached sulphite	61535	16.7	15.0	15.2

Table V.—Effect of storage on bursting strength of newsprint.

A study of Table IV shows: 1. Papers having a high ground-wood content retain their strength over a period of one year fully as well as those containing lower percentages of ground wood.

2. With the exception of the sample containing 60 per cent bleached sulphite, the tensile strength of all samples showed an increase at the end of six months after manufacture. In no case does the tensile strength show an appreciable decrease at the end of year's storage, although in some cases a decrease was noted during the second six months' storage.

BURSTING STRENGTH TESTS

The bursting strength tests shown in Table V indicate the following:

1. A greater increase was noted in bursting strength after storage of those papers having a high ground-wood content than of those containing lower percentages of ground wood.

2. Only one sample had a lower bursting strength a year after manufacture than when made. This paper contained 60 per cent bleached sulphite pulp and 40 per cent ground wood.

3. At the time of manufacture the bursting strength varied directly with the percentages of both bleached and unbleached sulphite. At the end of a year's storage the bursting strength still varied directly with the percentage of unbleached sulphite, but the strength was practically the same in all papers containing bleached sulphite. The cause of this has not yet been ascertained.

The results of the oil-absorption tests show that the resistance to oil absorption in each case is greater at the end of a year's storage than when the paper was first made. Those papers having a high ground-wood content show a greater increase in resistance to oil after storage than do those containing less ground wood. In all cases, the increase was very slight at the end of the first six months, practically all of it occurring during the second six months.

The tests were all made on paper specially manufactured, although the pulp was obtained from a newsprint mill. It would be desirable to repeat the experiments on samples of commercial newsprint in order to eliminate any possible effect of the method of manufacture.

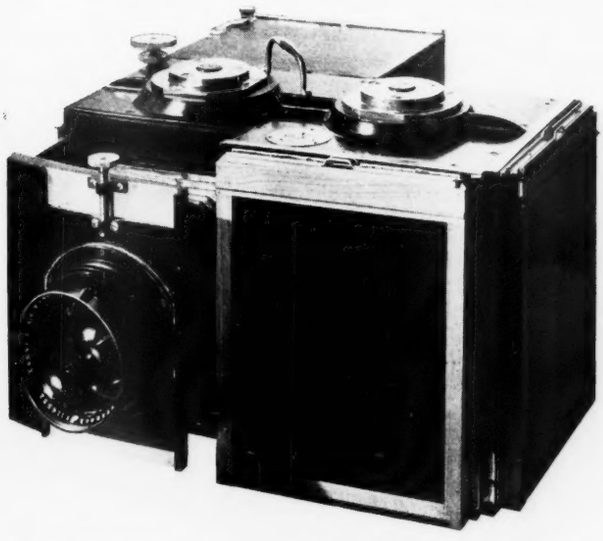
Instantaneous Three-Color Photography

By FRANK O. SULLIVAN

WE ARE indebted to D. A. Patterson, General Manager of the Rosenow Company, Chicago, for the following article describing the instantaneous three-color camera, now in use in that establishment. From the description, this camera seems to be a great improvement over the process camera, and also a camera used in Sweden. The latter had a mechanism for automatically shifting the panchromatic films behind the lens, and but a few seconds were necessary for each exposure. However, the Rosenow camera makes all three exposures at the same time, which is, undoubtedly, an added advantage.

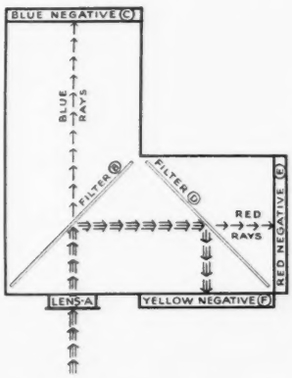
Mr. Patterson's article follows:

"To clearly understand the instantaneous three-color camera, it must be remembered that it was invented to fill a specific need. The introduction of color gave reproductions of merchandise an unusually pleasing quality that heretofore



had been confined to the article itself. Advertisers demanded color. The back pages of the magazines took on a new fascination, and sales of products increased. Reproductions made from colored drawings subdued the cries for color for a time, but most advertisers still felt that colored drawings were far short of a perfect representation of their merchandise. It was not until the introduction of color photography that a satisfactory solution presented itself.

"Early attempts at color photography (such as the Autochrome negatives) finally gave way to photography by means of color filters. The use of filters added the words 'direct-



The three-color image passes through the lens A *to the filter* B *which permits only the blue rays of the image to reach the negative* C. *The filter* B *also reflects the three-color image to the second filter* D *which permits only the red rays to reach the negative* E. *The filter* D *also reflects the three-color image to the yellow negative* F *which is sensitive only to yellow rays and requires no filter.*

color' to our vocabulary. As you know, direct-color means to photograph merchandise by placing it before the camera, and making three individual color-separation negatives. These negatives are made by means of color filters for each of the primary colors; one for the blue which allows only the blue coloring in the merchandise to pass through; one for the red which allows only the red rays to pass through; and one for the yellow in the same manner. Color separation negatives are made simply by placing a filter for each of the basic colors in front of the lens of an ordinary commercial camera, and making three separate exposures on three negatives—each of which will have an impression only of the color that the filter allowed to pass through. In this way, color-separation negatives could be obtained by using an ordinary commercial camera, together with a set of color filters. In spite of the fact that the results from this method were far superior to any obtained by previous methods, and that reproductions of merchandise made from printing plates obtained from such negatives, possessed detail as well as artistic attractiveness, there was still a hazard that caused both photographers and engravers a great deal of concern. The possibility of the mer-

(Continued on page 29)

August Printing Patents

Printed copies of patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,868,536. CLUTCH-DEVICE FOR WIRE-STITCHING AND STAPLING MACHINES OR LIKE APPARATUS. Arthur H. Maynard, Warwick, R. I., assignor to Boston Wire Stitcher Company, Portland, Me., a Corporation of Maine. Filed Sept. 9, 1929. Serial No. 391,248. 13 Claims. (Cl. 192—28.)

1. A clutch comprising a rotary driving-member, a rotatable driven-member, a key extending axially of and sheathed in one of said members, said key pivoted to adapt it to be moved radially to engage the other member to effect rotary driving connection between the members and a rackable element extending across the axis of the driving-member and movable into different positions to operate the key to effect the clutching and declutching action.

1,868,709. APPARATUS FOR PREPARING PHOTO STIPPLE INTAGLIO ENGRAVED PRINTING ROLLS. Albert D. La Pointe, Newark, N. J. Filed Feb. 7, 1929. Serial No. 338,081. 8 Claims. (Cl. 95—73.)

1. A machine for photo-printing designs on printing rollers preparatory to etching the surfaces thereof, comprising means to rotatably mount a printing roller provided with a light sensitized surface including traction wheels at opposite ends of the roller, a reciprocatory film carriage to support a design transfer film, the carriage having slide rails frictionally engaged by the traction wheels to transmit motion to the carriage whereby the latter is reciprocated and the film is caused to move in contact with the roller surface at speeds synchronized to the surface speed of the latter, and means for transmitting light through the film to the sensitized surface of the roller.

1,868,779. COLLECTING AND FOLDING MECHANISM FOR WEB PRESSES Isidor Tornberg, Plainfield, N. J., assignor to The Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Dec. 18, 1930. Serial No. 503,181. 23 Claims. (Cl. 270—42.)

1. In a web press the combination with a guide for leading a web to a folding cylinder, of means for introducing the web into the guide, the means comprising a pair of retaining members disposed respectively on opposite sides of the web and extending continuously thereacross, and mechanism for moving the members into engagement with the web and advancing the members with the web to the guide.

1,868,963. MULTICOLOR ROTARY PRINTING PRESS. Howard M. Barber, Pawcatuck, Conn., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a Corporation of Delaware. Filed Feb. 7, 1930. Serial No. 426,577. 3 Claims. (Cl. 101—178.)

1. In a multicolor rotary printing press, plate and impression cylinders, the impression cylinders being the same diameter as the plate cylinders or a multiple thereof, each impression cylinder comprising a shaft member, a longitudinally divided shell member of a predetermined diameter, the shell member being provided with concentric flanges at its ends having holes therein, dowels carried by the shaft member adapted to enter the holes to position the shell member on the shaft member, and clamping bolts hinged to the shaft member and provided with shoes adapted to be engaged with the flanges for securing the shell member to the shaft member.

1,869,342. PHOTO-ELECTRIC TUBE. Archie J. McMaster and Charles E. Parson, Chicago, Ill., assignors to G-M Laboratories, Inc., Chicago, Ill., a Corporation of Illinois. Filed June 14, 1930. Serial No. 461,119. 8 Claims. (Cl. 250—27.5.)

1. A method of producing a light sensitive surface on the cathode of a photoelectric tube which consists of forming a solution of an oxygen compound, applying the solution to the cathode, applying heat to evaporate the solvent, and allowing an oxide to remain on the cathode, and depositing an alkali metal upon the oxide.

1,869,353. TYPOGRAPHICAL COMPOSING AND LINE CASTING MACHINE. Karl Bienert, Berlin-Spandau, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y., a Company of New York. Filed Aug. 9, 1930, Serial No. 474,133, and in Germany Feb. 12, 1930. 7 Claims. (Cl. 199—18.)

1. In a typographical composing and line casting machine, the combination of escapement actuating rods, keyboard mechanism comprising cam carriages acting upon said rods, a frame supporting the keyboard mechanism and a stationary guide mounted in the machine frame and in which the frame is movable to bring the cam carriages into and out of operative register with the escapement rods, the guide being arranged to position the keyboard mechanism clear of the machine frame when the keyboard frame is moved to its inoperative position.

1,869,403. SHEET TRANSFER MECHANISM. Frank R. Belluche, Racine, Wis. Filed June 13, 1928. Serial No. 285,033. 11 Claims. (Cl. 91—62.)

1. In combination with a pair of cylinders having grippers adapted to clamp a sheet thereto whereby the sheet is movable therewith, means for transferring the sheet from one cylinder to the other including means for projecting the sheet toward the receiving cylinder, and means independent of the projecting means for holding the sheet against the receiving cylinder during the transferring of the sheet.

1,869,545. WEB ROLL SUPPORTING MECHANISM. Curtis S. Crafts, Oak Park, Ill., assignor to Goss Printing Press Company, a Corporation of Illinois. Filed April 22, 1929. Serial No. 357,127. 10 Claims. (Cl. 242—58.)

1. Web roll supporting mechanism including in combination a pair of rollers parallel to each other for rotatably supporting the web roll, spindles engaging the ends of the axial orifice of the web roll for steadying the web roll on the rollers and laterally movable supports in which said spindles are mounted.

1,869,569. WEB ROLL SUPPORTING AND CONTROLLING MECHANISM. Hubert Lang, Chicago, Ill., assignor to Goss Printing Press Company, a Corporation of Illinois. Filed April 22, 1929. Serial No. 357,096. 8 Claims. (Cl. 242—58.)

1. A web roll mechanism including in combination a plurality of vertically and transversely disposed supports, a pair of carriers, each movably mounted upon the supports and extending laterally therefrom, and devices mounted on the carriers for engaging either end of the axial orifice of a web roll.

1,869,570. WEB ROLL SUPPORTING MECHANISM. Hubert Lang, Chicago, Ill., assignor to Goss Printing Press Company, a Corporation of Illinois. Filed April 22, 1929 Serial No. 357,097. 15 Claims. (Cl. 242—58.)

4. A web roll supporting and handling mechanism including in combination means for engaging either end of the axial orifice of a web roll, means for rotatably supporting the engaging means, means for spacing and conjointly moving the supporting means to register the web roll, a cradle on which the web roll is received, and cables attached to the cradle, a common shaft on which the cables are wound for raising the cradle and a power means for turning the shaft.

1,869,614. WEB TENSIONING APPARATUS. Thomas Ewart Phythian, Headingley, Leeds, England. Filed Jan. 10, 1930. Serial No .419,959 and in Great Britain Jan. 19, 1929. 6 Claims. (Cl. 242—75.)

1. In a rotary web-printing press, a roll stand magazine, an endless belt web-tensioning device, set to engage the supply roll in use on the roll stand magazine, a reversible motor for turning the roll stand magazine to control the web tension, a floating roller over which the web passes, positively operating switches for determining the operation and direction of rotation of the motor, and a selective mechanism controlling the switches, the selective mechanism including a control spindle of adjustable position and a connection between the spindle and the floating roller whereby the spindle is moved in response to movements of the floating roller.

1,869,940. TYPOGRAPHICAL COMPOSING AND CASTING MACHINE. Luther E. Morrison, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 14, 1929. Serial No. 392,620. 18 Claims. (Cl. 199—52.)

1. In a typographical composing and casting machine, the combination of means for composing matrices in line at different levels, means for presenting the composed line to the mold at different levels, and automatic means for bringing the matrices composed at an upper level to a lower level before casting takes place.

1,870,082. PRINTING COMPOUND AND METHOD OF MAKING SAME. Paul Yohns, New York, N. Y., assignor of The Butterick Publishing Company, a Corporation of New York. Filed July 29, 1926. Serial No. 125,829. 6 Claims. (Cl. 134—35.)

1. A printing compound suitable for printing on thin paper comprising acetine, gum shellac and more than 14 per cent of a basic dye which remains permanently soluble in hot water after printing and drying.

1,870,117. PRINTING PRESS. Carl Henderson, Oak Park, Ill. Filed Jan. 10, 1931. Serial No. 507,968. 9 Claims. (Cl. 101—232.)

1. In a printing press: a printing couple comprising an impression cylinder and a form cylinder of substantially equal diameters; feeding mechanism disposed in the same vicinity as the form cylinder and adapted to feed sheets to the impression cylinder; and a transfer cylinder disposed on the same side of the impression cylinder as the feeding mechanism and adapted to strip the sheets from the impression cylinder, the sheets making less than one complete revolution of the impression cylinder.

1,870,314. METHOD AND APPARATUS FOR FEEDING SHEETS. Edwin S. Lincoln, Scarsdale, N. Y., assignor to Dexter Folder Company, New York, N. Y., a Corporation of New York. Filed June 11, 1930. Serial No. 460,526. 40 Claims. (Cl. 271—18.)

1. Means for separating a sheet of magnetic material from a stack comprising a pair of pole pieces of like polarity at opposite sides of the stack, a pole piece of opposite polarity above the stack, whereby the top sheet is lifted from the stack, and means for forwarding the lifted top sheet.

1,870,336. SHEET FEEDING APPARATUS. Edwin S. Lincoln, Scarsdale, N. Y., assignor to Dexter Folder Company, New York, N. Y., a Corporation of New York. Filed June 11, 1930. Serial No. 460,527. 26 Claims. (Cl. 271—18.)

1. Apparatus comprising the combination of magnetic lifting means for lifting a portion of a sheet, magnetic means for simultaneously holding down an adjacent portion to flex the sheet, and means for lifting the entire sheet bodily.

1,870,337. SHEET FEEDING APPARATUS. Edwin S. Lincoln, Scarsdale, N. Y., assignor to Dexter Folder Company, New York, N. Y., a Corporation of New York. Filed June 11, 1930. Serial No. 460,528. 15 Claims. (Cl. 271—18.)

1. In apparatus of the class described, the combination of a lifting magnet adapted to lift a portion of a sheet from a pile, a pivotally mounted arm supporting said magnet, means for rotating said arm about its pivot to life said magnet, and means for feeding the lifted sheet off the pile

1,870,338. SHEET FEEDING APPARATUS. Edwin S. Lincoln, Scarsdale, N. Y., assignor to Dexter Folder Company, New York, N. Y., a Corporation of New York. Filed June 11, 1930. Serial No. 460,529. 20 Claims. (Cl. 271—18.)

1. In an apparatus the combination of a plurality of vertically movable supports, lifting means carried by the supports, a common operating shaft for the supports, and a lost motion connection between one of the supports and the shaft.

1,870,339. SHEET FEEDING APPARATUS. Edwin S. Lincoln, Scarsdale, N. Y., assignor to Dexter Folder Company, New York, N. Y., a Corporation of New York. Filed June 11, 1930. Serial No. 460,530. 15 Claims. (Cl. 271—18.)

1. In an apparatus, the combination of a horizontally movable support and a plurality of lifting magnets carried thereby and vertically movable relative thereto, and a common operating means for lifting the magnets relative to the support and for thereafter moving the support and the magnets horizontally.

1,870,358. PROCESS OF TREATING PRINTED PAPER FOR USE AS PAPER MAKING STOCK. Logan A. Dils, Chicago, Ill., assignor to Kellogg-Dils, Inc., Chicago, Ill., a Corporation of Delaware. Filed Dec. 2, 1930, Serial No. 499,610. Renewed Dec. 12, 1931. 6 Claims. (Cl. 92—9.)

1. The process of making paper-making stock from printed paper, which consists in finely shredding printed paper, then beating it at atmospheric pressure in a hot solution containing sodium hydroxide, sodium borate, trisodium phosphate and potassium carbonate, and then washing the beaten mass.

1,870,424. AUTOMATIC LABEL PRINTING, CUTTING, FOLDING, AND PACKING MACHINE. Arthur Rosenthal, Grand Rapids, Mich. Filed Jan. 10, 1929. Serial No. 331,662. 9 Claims. (Cl. 101—292.)

1. In an automatic apparatus for printing, cutting, folding and packing a plurality of label strips, the combination of a printing press with a plurality of printing means, a plurality of supply reels delivering a plurality of label strips in parallel relation thereto, a plurality of blotter strips with supply and take-up reels therefor, guides for the label and blotter strips to and from the printing press, a plurality of supply reels for delivering overlay strips auxiliary label feed devices comprising guideways for the label and overlay strips, reciprocating spring fingers under independent pressure to engage the separate label strips in the guideways, means for elevating the spring fingers on their return movement, cut off shears the lower member of which is provided with a grooved engaging jaw surface and the pivoted member of which is provided with independently adjustable clamping jaws for engaging and holding the label strip in the groove when severing the label and to vary the feeding action of the label strips to equalize the labels, parallel label feed jaws for grasping the label in advance of the cut-off shears delivering the same to be cut, the upper member of which is broad and centrally pivoted to equalize the action on both the label strips to effectively engage each strip, folder means cooperating with the jaws to fold and crease the labels, delivery jaws in spaced parallel relation to the feed jaws for grasping the folded label and delivering the same to the packer means, and packer means cooperating with the delivery jaws.

1,870,430. DRIVE FOR A PRINTING MEMBER, INKING DEVICE, AND GUARD. Ralph G. Whitlock, Los Angeles, Calif., assignor to Ralph G. Whitlock Patents, Inc., Las Vegas, Nev., a Corporation of Nevada. Filed Feb. 23, 1929. Serial No. 342,091. 5 Claims. (Cl. 101-301.)

1. The combination of a reciprocable printing member; an inking device, a movable guard, and means operable by the guard for initially moving the inking device in a direction substantially alined with the path of the printing member to clear the inking device from the type face of the printing member, then bodily move the cleared inking device first out of and then into the path of the printing member and finally abruptly move the inking device in a direction alined with the path of the printing member.

1,870,466. COMBINATION SAW PLANER AND PLANER FOR PRINTERS' USE. John A. Richards, Kalamazoo, Mich. Filed Aug. 1, 1931. Serial No. 554,414. 9 Claims. (Cl. 29—33.)

1. In a combination saw trimmer and planer machine, a suitable work table having a vertical rear wall, a bracket having a face corresponding to the wall, the bracket being slotted and having clamp bolts for bolting the same in place, an electric motor having a motor frame carried by the bracket, an adjustable post in the bracket grooved and retained by a suitable bolt, the opposite end being adjusted by oppositely disposed set screws to adjust its alinement, a counterbalance spring on the post between the frame and table for counterbalancing when the motor and frame are disposed in horizontal position, and a detachable adjusting arm for the frame for clamping the frame in working position when the post is horizontal and permitting the same to be free to turn when in the vertical position.

1,870,474. PRINTING PRESS. Ralph G. Whitlock, Los Angeles, Calif., assignor to Ralph G. Whitlock Patents, Inc., Las Vegas, Nev., a Corporation of Nevada. Filed June 30 1925. Serial No. 40,631. 14 Claims. (Cl. 101—91.)

1. In a printing press, in combination, a printing member; type secured thereto; a guard box surrounding the printing member and the type; a type shield rockably mounted on and

(Continued on page 26)

TRADE LINOTYPE MARK

LINOLITE MAGAZINES

22 Pounds Lighter yet Cost No More

In many shops from one to two tons of unnecessary weight is now being lifted during every shift. Count the number of magazine changes made in your own shop in a single day; multiply that by the difference in weight between Linolite and brass (22 pounds, for example, on the standard 90-channel magazine) and see how much backache you could save by changing to Linolite. Linolite is an alloy specially developed for magazines that is just as satisfactory as brass in every way and ever so much lighter.

MERGENTHALER LINOTYPE COMPANY
BROOKLYN, N. Y.

SAN FRANCISCO · CHICAGO · NEW ORLEANS
CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA
Representatives in the Principal Cities of the World

Linotype Metro No. 2 Family

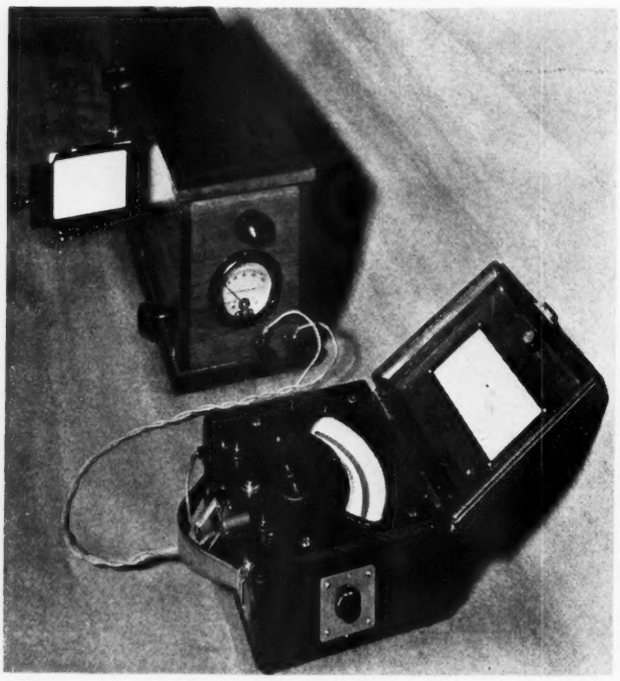
The Daily News Transparency Tester

By WILLIAM BAUMRUCKER*

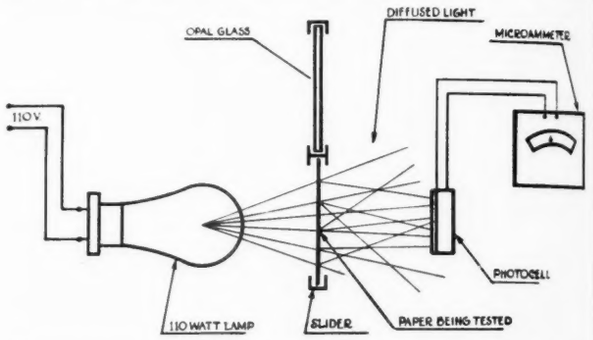
THE purpose of the *Daily News* Transparency Tester is to supply a simple and rapid means of checking the transparency of paper. There are several aspects of newspaper printing which determine whether or not the final result is going to "Show Through," including characteristics of the paper and of the ink. One of the most important of these is the transparency of the paper, and while the Daily *News* Laboratory has had facilities for checking over other qualities of the paper there was no instrument available to determine the transparency.

The instrument is very simple to operate, simple in principle and the results obtained are reliable. It gives a means of telling the comparative transparencies of different samples of the same kind of paper. The results obtained may be duplicated and when two pieces of newsprint test the same, it is an indication that they will both transmit the same amount of light per square inch.

A description of the instrument is as follows: Light from the incandescent lamp which is an ordinary 100-watt frosted bulb, strikes the sample to be tested. That portion of the light which passes through the paper and strikes the photo-electric cell, generates in this cell a small current of electricity. The amount of current generated is proportional to the light striking the cell and, therefore, the reading on the sensitive micro-ammeter is a measure of the amount of light passing through the paper. Before each reading is made,



a section of opal (milk) glass (which is taken as an arbitrary standard) is interposed between the lamp and the photo-electric cell and by means of an adjustment on the cell which regulates its distance from the opal glass slide the reading on the micro-ammeter is regulated to a "zero" setting. In the case of the particular ammeter used, 25 micro amperes is taken as the standard "zero" setting. This setting for the standard opal glass has been previously calculated, comparing it to the same setting of the photo cell and the lamp with nothing interposed between; that is, 100% light transmission. Therefore, when a reading in micro amperes is obtained for light coming through a piece of paper proportional to the per cent of light transmitted, it may be directly calculated and stated as a percentage. Eventually it is intended to calibrate the ammeter scale directly in per cent of light transmitted, but this has not been done as yet.



Diagrammatic scheme showing the layout and operation of the Daily News Paper Transparency Tester. One side of the slide frame is fitted with a pane of opalescent glass which serves as a standard with which to compare samples of paper inserted in the opposite side of the slide.

The photo-electric cell used is known as the Weston Photronic cell. It converts light energy directly into electrical energy and does not require any polarizing dry batteries. This cell is sensitive to very nearly the same type of light as is the human eye. Heat rays or invisible ultra violet light do not affect it appreciably. Therefore, any light coming through the paper which affects the cell is the same light coming through the paper which would be seen by the human eye. The cell is slightly more sensitive to red light than is the human eye. Thus, when using red colored paper, the readings are not exactly comparable to readings on white paper. However, readings on any samples of approximately the same color newsprint are comparable among themselves and may be calculated to per cent of light transmitted.

No skill in using the instrument is required. The sample to be tested is cut to size around a small steel platen and inserted in the slider. When the slider is out, the standard opal glass is in position and the photo-cell position is adjusted to "zero" setting. The slider is then pushed in, interposing the paper sample in position and the corresponding reading is taken from the micro-ammeter.

There are a number of theoretical definitions of opacity and much controversy as to which is correct. In designing this instrument it was accepted as a fact that it would probably be very hard to design an instrument of universal application and, therefore, it was attempted only to build something to give consistent and comparative results when used on the same kind of paper. Tests on different samples of newsprint are comparable. Tests on different rotogravure stocks are comparable. Likewise, tests on book paper or any other type of paper are comparable among themselves, but not necessarily to any other type of paper.

Thus far transparency tests have been made in the *News* Laboratory on approximately 500 samples of newsprint and though no attempt has been as yet made to draw any conclusions, it is very apparent that those samples having the highest transparency also have the greatest tendency toward show-through when printed.

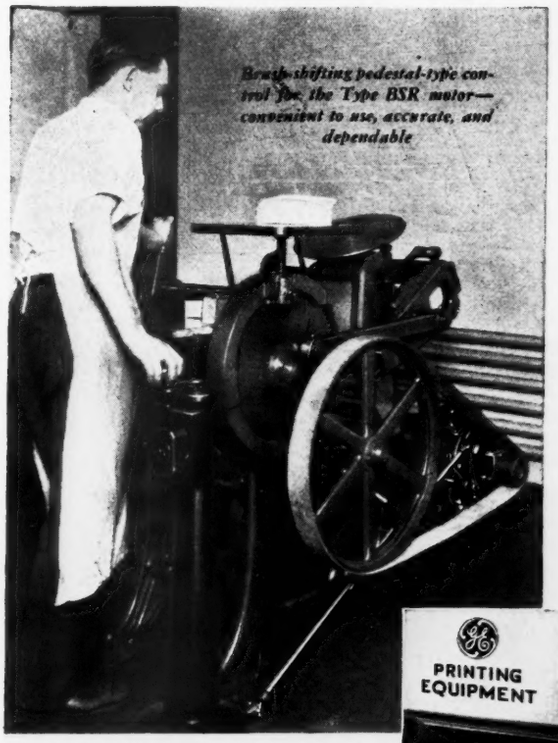
*Chemist, New York *Daily News*, New York, N. Y. This instrument was demonstrated by Mr. Baumrucker at the A. N. P. A. Mechanical Conference, held in Cincinnati, Ohio, June 7-8-9.

If Your Power Service Is Single-Phase

Here's what the G-E TYPE BSR MOTOR will do for your job presses

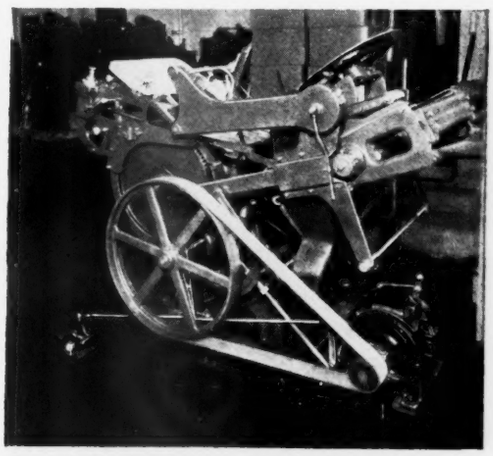
GENERAL ELECTRIC'S Type BSR single-phase brush-shifting motor has a wide speed range even at light load; it enables you to obtain exactly the speed you require for the particular job, when running light or when speeding up production. Its speed control over this range is obtained by shifting the brushes; thus it will help you economize. Its control is simplicity itself: a dependable, pedestal-mounted controller which, by means of a calibrated dial, gives ready indication of speed and permits you to save time and material when resetting for register work. This motor may also be governed where desired by a simple, reliable foot-type controller. Either type may be placed withinconvenient reach of theoperator.

Information about the many features and advantages of Type BSR motors and control is available through a G-E office near you; or address General Electric Company, Schenectady, N. Y. Sales and engineering service in principal cities.



Brush-shifting pedestal-type control for the Type BSR motor—convenient to use, accurate, and dependable

All the facilities of General Electric swing into action to give you the best when you open the door of the G-E Printing Equipment Section. Proved engineering service; sound equipment values; motor and control equipment from one manufacturer; service shops, warehouses, and sales offices from coast to coast—all are represented there, ready to serve. Whatever type of press you have, whether you operate on a-c. or d-c. power, General Electric can supply you with dependable electric equipment.



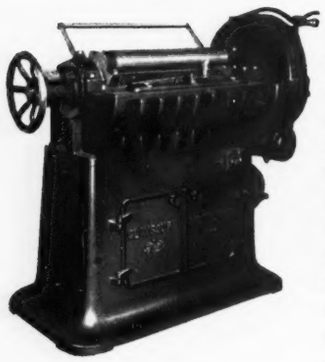
Brush-shifting foot-type control for the Type BSR — simple, easy to place where you want it, and reliable

200-646

GENERAL ELECTRIC

Latest Printing Equipment Mechanisms

Curved Plate Finishing and Solidifying Machine

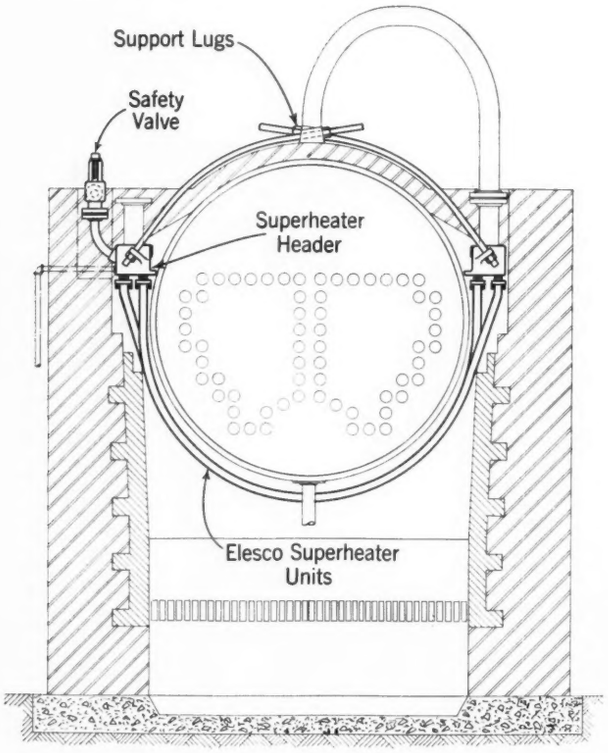


Officials of The Claybourn Corporation, 3713 N. Humboldt Ave., Milwaukee, Wis., announce a new Precision Curved Plate Finishing and Solidifying Machine which eliminates the laborious process of hand finishing plates with its attendant hazards. This rotary finishing and solidifying machine finishes plates automatically and with precision. Its makers consider this machine to be one of the greatest contributions ever made to successful rotary printing.

New Superheater for HRT Boilers

A new and improved superheater has been developed recently by The Superheater Company, 60 East 42nd St., New York. It is of compact and simple construction and may be installed readily by regular plant attendants. No changes are required in settings or arches of the boiler or in other plant equipment. The superheater is standard for all h.r.t. boilers.

This new h.r.t. superheater comprises simply two cast-steel headers, suspended one on each side of the boiler shell,

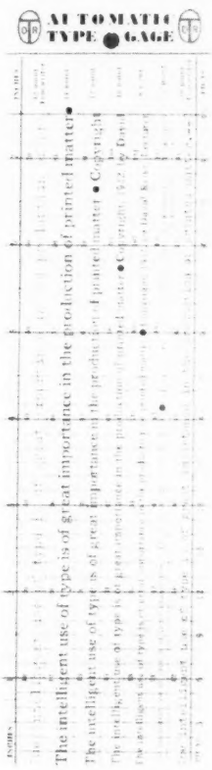


which are connected by detachable tubular elements or units extending around the underside of the boiler. The headers are supported by adjustable clamped steel rods. By raising or lowering the headers, the units are correspondingly raised or lowered in the combustion chamber, which regulates the superheat or final temperature of the steam.

This superheater is automatic in operation. Saturated steam is carried from the boiler nozzle through a connecting pipe to one header, known as the saturated-steam header. From there it passes to the other header or superheated-steam header, through the units under the boiler, during which it is subjected to the relatively intense heat of the gases of combustion in the combustion chamber. The steam, then superheated, passes to the main steam line for use in the plant.

Use of superheated steam in power generation reduces steam consumption of prime movers, condensation losses, and fuel and water consumption by overall plant economy, which increases the efficiency both of the boiler and entire plant.

Copy Fitting Instrument



The new Reisz Automatic Type Gage is a combination of type gage and a fairly accurate, complete and simplified copy fitting system of the most often used sizes of body type.

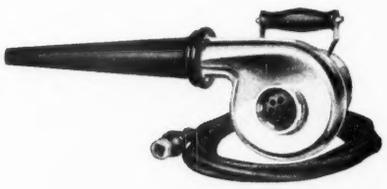
It is claimed that this gage reduces a formerly complicated operation to a simple one—in many instances to an automatic process, as it makes the user see and feel the proportion between a given piece of copy and the required type and space, thus doing away with the need of laborious calculations.

No directions are needed to use this gage as the same copy is used throughout, automatically showing the difference in width between typewriting and body type, and all typewriter units as well as type units are counted at every inch.

The inventor, David Reisz, 401 Ulmer Bldg., Cleveland, Ohio, is lecturer on advertising typography at the Cleveland Advertising School, as well as a practical printer.

New Tornado Blower

The Breuer Electric Mfg. Co., 840 Blackhawk St., Chicago, Ill., announces a new portable electric blower, the Tornado Model 4, for blowing dust out of motors and machinery parts, vacuum cleaning bins and stock rooms, spraying insecticides, etc.



This new blower is almost identical in design and construction to the large heavy-duty line of Tornado Blowers, being slightly smaller over all.

The Tornado Model 4 possesses ample power to do a first-class cleaning job and is priced to meet the present trend.

SAVE ½ AND MORE

on your wiper cost

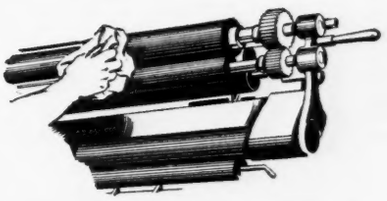
with the new

NIBROC WIPERS

Rumple and crush a NIBROC WIPER. *Notice that it doesn't crease or tear and that it's soft and pliable.*

New, soft and highly absorbent, Nibroc Wipers have a far greater area per pound and are sold at a much lower price per pound.

Nibroc Wipers have a fast and great absorption of inks, oils, greases, etc. Do not lint, contain no grit, and being soft and flexible can be handled like cloth without scratching. The "wet strength" of Nibroc Wipers is remarkable and they can be laundered, if desired.



NIBROC WIPERS *take up grease, dirt and ink in double-quick time and will not scratch.*

NIBROC WIPERS *are packed conveniently so that wiper space is saved for compact plants. Sheets are either 18" x 24" or 24" x 36".*

Send coupon today for FREE SAMPLE *and name of nearest distributor.*

BROWN Company
FOUNDED 1852
Portland, Maine

NEW YORK
ST. LOUIS
BOSTON
SAN FRANCISCO
CHICAGO
MONTREAL
PARIS

BROWN COMPANY, *Dept. G*
PORTLAND, MAINE

You may send me a FREE SAMPLE of your NIBROC WIPERS and name of nearest distributor.

Name .....
Firm .....
Street .....
City ..... *State* .....

Operating Features of Two-in-One Linotype

The Two-in-One Linotype, latest achievement of Linotype engineers, is a combination display and text machine. It offers in one machine the combined advantages of display and straight matter Linotypes. The operator can change from straight matter to display composition in a few seconds, and change back from display to straight matter just as quickly.

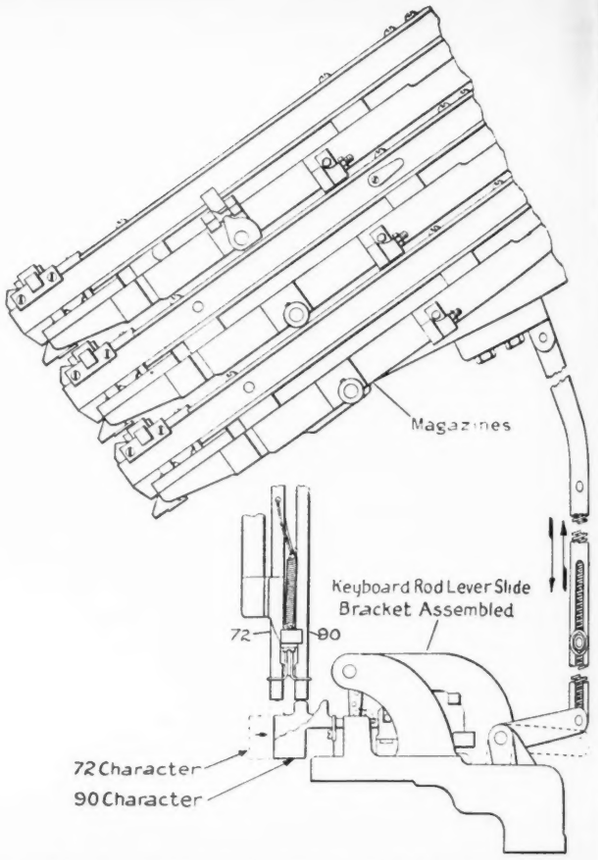
The secret of this composition flexibility lies in the equipment of the machine and the ingenious mechanical methods by which the magazines are brought into use. Standard Linotype magazines are used—magazines of 72 and 90 channels, fully interchangeable with outstanding equipment.

One of the features which makes this machine a flexible operating unit may be found in the key rod arrangement which has been designed to simplify changing from one magazine to another. Two sets of keyboard rods are used, one for 72 channel spacing and one for 90, and the proper set is automatically brought into operative position when the magazines are raised or lowered as is shown in the drawing.

The key rods themselves do not move forward and backward, but short auxiliary sections do, to make the proper contacts between key bars and key rods. The short auxiliary sections are moved automatically from 72 to 90 channel position (or vice versa) by reason of the movement of the magazine frame.

The characteristic Linotype light keybutton touch and instant matrix response remain unimpaired.

A small shift rod projects through the keyboard tray. By moving this small shift rod into operative position, a spaceband is delivered with a thin space at a touch of the spaceband key. This feature automatically provides the necessary wider spacing between words when larger display faces are being set. For the normal close spacing needed in small faces this device is not employed.



SATISFIED WITH CERTIFIED

CERTIFIED DRY MATS

CERTIFIEDS GIVE 100% VALUE

Ease in molding, speed in scorching, facility in casting make Certifieds the best "buy" in dry mats because they mean real economy in time and money.

If you are not now using Certifieds in your stereotype foundry, we respectfully suggest that you try some and verify their 100% value-giving quality.

We will gladly supply samples free of charge and without any obligation on your part so that you can prove Certifieds to yourself in your own foundry under your own working conditions.

Remember, there's a Certified mat to serve your purse and purpose.

CERTIFIED DRY MAT CORPORATION

338 MADISON AVENUE ▾ ▾ ▾ ▾ NEW YORK, N. Y.

For dependable stereotyping--- use Certified Dry Mats

Made in U. S. A.

Equipment Manufacturers

get a Head Start *in the* 1933 Sales Race

● October, November, and December of 1932 offer every printing equipment or supply manufacturer an opportunity to get a three months' head start in the 1933 sales race.

● Business shows many signs of a decided revival. Thousands of business executives say we are coming out of the depression. Certainly there are sufficient signs to warrant any manufacturer starting his 1933 sales drive now. It is generally conceded that the last quarter of this year will be the best from a sales standpoint. Here is a chance for wide-awake sales and advertising managers to make a good last-quarter showing.

● Start advertising in *Printing Equipment Engineer* in October. Reach 6,000 prospects for printing equipment and supplies. Have these prospects read your advertising sales message each month for the balance of the year. Every reader is in a position to specify, recommend, or actually purchase your equipment or supplies. Our readers are the men your salesmen call upon. They are the men who determine *whose* equipment or supplies will be purchased. This is why we believe it is worth while for you to start advertising now in *Printing Equipment Engineer.*

PRINTING EQUIPMENT ENGINEER

1370 ONTARIO STREET, CLEVELAND, OHIO

Write now for attractive October, November, and December rates.

September, 1932

"So you can't see any difference in type metal so long as it's from a large concern?"

"WELL, there is a difference . . . a big difference... and if you were working in the stereotype department instead of the front office you would find out pretty quick what that difference is. Imperial has the best metal. That's because they manufacture type metal only while other manufacturers make Babbitt metal, castings, lead products, mill supplies, etc. You see when a concern spends all their time on one product they get to know all the fine points about the metal they are manufacturing. Because they know all the fine points you will find Imperial Type Metal cutting down metal troubles, making less dross, saving fuel, and producing sharper and cleaner plates. Now, I wish you would do just what I tell you . . . . order Imperial Metal, because I'm the fellow that is going to use it and I know by experience it pays to

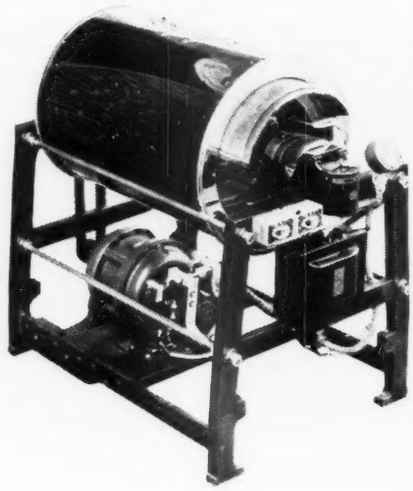
stick to

Imperial METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

Bigsby Matrix Former and Dryer

Patent applications have recently been filed by C. M. Bigsby, Compton, Calif., covering a Matrix Former and Dryer which makes use of the principle of centrifugal force and employes a drum capable of receiving two standard newspaper matrices simultaneously.



The new device consists of a horizontal drum, having heating elements attached which rotate with the drum and are accurately controlled by thermostats also integral with the rotating portion. The matrices are inserted in the drum by the use of sliding trays, and each half of the drum is heated and controlled separately, so that it may be used either for forming one or two mats at a time.

The essential claim of Mr. Bigsby's machine is that the mat is held in place during the drying period by a "pressure pad" which rotates inside the matrix. The force thus developed is independent of the weight of the mat itself. The pressure pad is made of a heavy, pliable material which settles itself easily into the interstices of the mat, and, it is claimed, due to its weight, develops many times the amount of pressure evolved in the rotation of the matrix itself. It is further claimed the new device will develop an even pressure over all portions of the matrix.

Due to the fact that the matrix is rotated within the *interior* of the drum, the printing areas are accurately conformed to a rigid contour approximately identical to that of the casting box, and the heat being applied to the back, and thus to the printing areas of the mat, the moisture is completely driven out of these portions. This, Bigsby claims, makes possible brilliant printing of solids and halftones.

The device is equipped with safety switches, so the drum cannot be started until the matrix is in place and with a solenoid brake which automatically stops the drum when the current is cut off.

Nibroc Wipers Announced by Brown Company

A new style of wiper for use in printing plants has been scientifically developed in the laboratories of the Brown Company, Portland, Maine. The product has been given the trade name of Nibroc Wipers.

Because Nibroc Wipers give a larger wiping area per pound and because of the low price per pound, the Brown Company claims that they offer a genuine economy. Nibroc Wipers possess high absorption powers for oils and grease, have no lint or grit, are nonscratching and do not tear easily even when wet.

The Brown Company has long been identified with the paper industry, having been established since 1852. In recent years a number of finished products used in many industries have been developed from the company's basic pulps.

New Vapo Systems Unit

G. C. Flint, President of Vapo Systems, Inc., 211 West Wacker Drive, Chicago, Ill., announces a newly-redesigned head for use with the Vapo System of paper roll humidification. The new heads are 2½ in. diam. instead of the former diameter of 6 in. The new heads have a more pleasing appearance to the eye.

Mr. Flint has also announced a new unit for home humidification. No air pressure is required in its operation. The unit can be installed and operated at very low cost. This equipment, it is claimed, will change water into such fine particles that they appear to be small globular films. Upon being emitted from the unit they disappear into the air just like small bubbles.

The Pressroom Foreman

(Continued from page 7)

seldom develops into a careful journeyman. A careless journeyman never becomes a successful foreman.

He should know how to keep pressrooms in order, the machinery in first-class condition, and the repair bills down. Pressroom depreciation is important in printing office economy and as to whether it is high or low in fact as well as in bookkeeping entries rests largely with the foreman.

The successful foreman in his relations with his men does not nag. No policy could be more short-sighted. Authority should be exercised, of course, but the effort to exercise it should never be too much in evidence. One cannot expect to control others who cannot control himself. He should be able at all times to get along with other people. This applies to the working force, to other departments, to the office employees and to the customers and their representatives. There are days of intense competition, when there seems to arise continually an unusually large number of causes of irritation among those who have to do business together. A demand therefore exists for the exercise of more than the usual amount of tact and patience in dealing with those both below and above us in the business scale. We cannot always keep our heads out of the clouds possibly, but we can at least keep our feet on the ground. The foremen of all departments must so deal with one another that work will go smoothly through the plant—unhurried, without friction, and without excessive waiting time, which is always expensive and sometimes entirely destructive of profits.

I have seldom found a foreman who knew as much about paper as he should know. Usually he can talk at length about the grade or grades he is using, but on the general subject of paper he is apt to be uninformed. It is nevertheless a fact that the study of paper is a most interesting occupation and could be made a profitable hobby by one who, like a pressman, is constantly working with it.

Heating, lighting and ventilating—atmospheric control—form a subject that must be dealt with in the immediate future. The mechanical engineers in the

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printing industry are taking it up. It is a subject that because of its newness offers foremen an opportunity to get in on the ground floor.

Pressroom foremen have a responsibility in connection with the selection of supplies to a degree not characteristic of other departments. They should, therefore, be competent purchasing agents. This means that they should keep abreast of market conditions. The manufacture of printing inks, for instance, has undergone a revolution within the last dozen years, but there are foremen, usually of what is called the "old school," who have not yet discovered the fact. The wise foreman devotes a part of his leisure to a study of chemistry—at least that part of it which concerns itself with the making of printing inks.

Also the wise foreman will be guided in his choice of materials by only one consideration—the welfare of the house from which he draws his pay. The wily proposals of some salesmen are insistent and difficult to withstand. One good argument against acceptance is that it does not pay. I know two men who profited financially from commissions on purchases for awhile without being found out, but eventually lost what were almost the best jobs in the business, and who probably, although still in middle life, will never again secure jobs as good; they lost them because they could not withstand temptation of this kind. The course they followed did not pay them and it will not pay any other foreman who follows it.

August Printing Patents

(Continued from page 16)

within the guard box; an ink pad secured to the type shield; an inking roller revolubly mounted in the guard box and in contact with the ink pad; a tension spring secured to the printing member and tensioning the type shield; means to actuate the printing member within the guard box to make impressions; means to actuate the guard box to hold the matter before, during and until the impression operation is completed; means to retain in contact with, and remove from the face of the type, the ink pad during the operation; means to operate the type shield to cover the type; means to remove the type shield from over the type during the printing operation.

1,870,481. METHOD OF AND APPARATUS FOR PRODUCING MATRICES. Roy C. Baker, Wollaston, Mass., assignor of one-fifth to Louis A. Jones, Belmont, Mass. Filed July 17, 1929. Serial No. 378,879. 17 Claims. (Cl. 101—12.)

1. Matrix producing apparatus comprising, in combination. means forming a sealed chamber for the type and the matrix paper, the chamber having a flexible wall, and means for exhausting air from the chamber and causing the wall to urge the paper against the type face.

1,870,529. PASTE DRYING DEVICE FOR A PRINTING WEB. Oscar Charles Roesen, Brooklyn, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Nov. 15, 1927, Serial No. 233,441. Renewed Jan. 6, 1932. 7 Claims. (Cl. 242—58.)

1. In a web press, the combination with a fresh web roll supporting shaft adapted to rotate on its axis, and a contact on this shaft for completing a circuit at a predetermined time during the revolution of the roll, of means for engaging the surface of the fresh web roll for pasting the same to the expiring web roll and means operated by the closing of the contact for applying powder to the surface of the web after pasting, for the purpose described.

1,870,542. PAPER GUIDE FOR FOLDING BLADES. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Sept. 8, 1928, Serial No. 304, 656. Renewed Jan. 6, 1932. 13 Claims (Cl. 270—50.)

1. The combination of a folding blade for a folding machine with a shield for preventing the paper from crowding into the corner next to the butt of the blade.

1,870,543. PAPER PIERCING DEVICE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Dec. 18, 1928, Serial No. 326,861. Renewed Jan. 19, 1932. 6 Claims. (Cl. 270—38.)

1. In a folding couple, the combination with two cylinders forming the couple and impaling pins on one of the cylinders, the other cylinder having clearance holes for the impaling pins contracted at their outer ends so as to admit the pin snugly and give an adequate support to the paper on that cylinder around the pin.

1,870,544. FOLDING BLADE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Jan. 2, 1929, Serial No. 329,869. Renewed Mar. 26, 1932. 6 Claims. (Cl. 270—50.)

1. The combination with a folding cylinder, of a rotating folding blade-element having means to conform the sheet being folded to substantially the curvature of the folding rolls during the folding of the sheet.

1,870,545. WEB FEEDING AND SLITTING MECHANISM. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Original application filed May 26, 1926, Serial No. 111,787. Divided and this application filed Apr. 6, 1929. Serial No. 353,197. 9 Claims. (Cl. 164—61.)

1. In a web feeding device, the combination with a drag roller. and means for positively driving the drag roller, of a slitting shaft having a slitting knife thereon for cooperating with

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For Forming and Scorching Stereotype Dry Matrices

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Appleton Post Crescent.....Wisc.	Waltham News-Tribune.....Mass.	York Dispatch.....Penna.
Pomona Progress Bulletin.....Calif.	Warren Times.....Penna.	Ottawa Republican.....Ill.
White Plains Reporter.....N. Y.	Polish Daily News.....Mass.	Lima News.....Ohio
Stevens Point Journal.....Wisc.	National Mat Service.....Mo.	Fall River Herald.....Mass.
Ogdensburg Republican.....N. Y.	Wausau Record-Herald.....Wisc.	Montreal Star.....Canada

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the drag roller to slit the web longitudinally, positive means for driving the slitting shaft from the drag roller and means whereby the slitting shaft can be swung away from the drag roller and held in fixed position away from it.

1,870,546. PRESS DRIVE. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed May 10, 1929, Serial No. 362,018. Renewed Jan. 6, 1932. 8 Claims. (Cl. 270—8.)

1. In a newspaper printing machine, the combination with a lower deck consisting of a plurality of units and an upper deck comprising two units arranged end to end, of a driving shaft extending along the units of the lower deck, means for detachably connecting the driving shaft with the several units of the lower deck so that any of them can be operated and any of them can be stopped, a vertical shaft connected to be rotated by the main shaft and extending up to the level of the upper deck, a shaft parallel with the driving shaft connected with the vertical shaft to be operated therewith and extending throughout the length of the upper deck and having means for driving the printing machine unit at the remote end of the upper deck, means for detaching the unit therefrom, and a second horizontal shaft at right angles to the last named horizontal shaft connected with the vertical shaft and with the printing machine unit in the upper deck at the opposite end thereof for driving it.

1,870,661. PRINTER'S ROLLER AND PROCESS OF MAKING THE SAME. Benedict F. Vogt, Louisville, Ky. Filed Feb. 21, 1930. Serial No. 430,381. 2 Claims. (Cl. 18—58.)

1. Those steps in the process of constructing a printer's roller which consist in assembling a circumferentially expansible tubular fabric casing in unexpanded condition on a stock with its ends held in fixed spaced relation, placing the casing and stock in a mold having a diameter equal to the finished article and greater than the diameter of the unexpanded tubular casing, and forcing a cushioning compound in a freely plastic state into the casing whereby to expand and stretch the casing circumferentially while maintaining it at a fixed length, and allowing the compound to solidify with the casing thus stretched whereby the compound will be under radial compression upon removal of the mold.

1,870,717. RING SPACER FOR MATRIX SETTING AND TYPE LINE CASTING MACHINES. Julius Dorneth, Konradshohe, near Tegel-Berlin, Germany, assignor to Typograph G. m. b. H., Berlin, Germany. Filed Dec. 8, 1931, Serial No. 579,781, and in Germany May 22, 1931. 4 Claims. (Cl. 199—67.)

1. A ring spacer for matrix setting and type line casting machines, comprising a non-rotatable part including an arm, an annular portion carried thereby, a hook on the upper end of the arm for suspending the arm from a guide wire, a rotatable wedge ring on the annular portion, a spring secured to the rotatable wedge ring, and in the position of rest of the wedge ring, engageable over the non-rotatable part of the spacer for clamping the same between itself and the wedge ring so that the latter is held fast in its initial position during the circulation of the spacer on the guide wire.

1,871,330. TYPOGRAPHICAL SLUG-CASTING MACHINE. George E. Marlatt, Pasadena, Calif. Filed June 8, 1931. Serial No. 542,798. 16 Claims. (Cl. 199—59.)

1. In a slug-casting machine, in combination with the ribbed slugs, the adjustable knife for trimming the ribs of the slugs, the slug-ejector blade and the spring plate for guiding the slugs from the trimming knife in advance of the ejector blade, grooves in the spring plate coinciding in position with the ribs on the slugs and capable of engaging the ribs and thus preventing abnormal behavior of the slugs while passing the spring plate in advance of the ejector blade.

1,871,374. DEVICE FOR WASHING OR TREATING PLATES. Robert John, Long Branch, N. J., assignor to Aquatone Corporation, Chicago, Ill., a Corporation of Delaware. Filed May 19, 1930. Serial No. 453,589. 3 Claims. (Cl. 59—72.)

1. In a device of the character described, a suitable support, a slanting tray mounted on the support by a universal joint, means for rotatively changing the direction of slant of the tray, the means comprising a plurality of supports rotatably mounted below the tray around the universal joint, one of the supports being higher than the other, whereby upon rotation of the supports the direction of slant of the tray is rotatively changed, and a flexible anchorage for the tray, the flexible anchorage limiting rotation thereof, but permitting reciprocatory rotary movement of the tray.

1,871,568. PRINTING PLATE AND METHOD OF MANUFACTURING IT. Hylton Swan, Upper Montclair, and Sigfried Higgins, Verona, N. J., assignors to Bakelite Corporation, New York, N. Y., a Corporation of Delaware. Filed Nov. 15, 1929. Serial No. 407,365. 8 Claims. (Cl. 101—395.)

1. A printing plate having a printing face portion prepared from a phenolic resinoid composition and a backing of resilient material.

1,871,626. PHOTO ELECTRIC TUBE. Paul H. Macneil, Huntington, N. Y. Filed June 6, 1930. Serial No. 459,492. 2 Claims. (Cl. 250—27.5.)

1. A photoelectric tube including an envelope and supporting base therefor, an anode, a selenium sulphate member acting as a photo-cathode, an energizing filament supported by the base for energization to maintain the photo-cathode of the tube just below its actuation point, the filament being positioned within the envelope to be energized through the base, and an individual envelope within the first-mentioned envelope sealing the filament with respect to the first-mentioned envelope.

1,871,838. CYLINDER PRINTING PRESS. Artur Buttner, Heidelberg, Germany, assignor to Schnellpressenfabrik Aktiengesellschaft, Heidelberg, Heidelberg, Germany. Filed Feb. 17, 1931, Serial No. 516,424, and in Germany Feb. 22, 1930. 8 claims. (Cl. 101—383.)

1. A cylinder printing press, comprising, in combination, a form carrier adapted to be moved to and fro; tracks upon which the carrier can be moved as stated, a guiding frame for the carrier and adapted to be moved to and fro with the carrier, means for thus moving the guiding frame and carrier, and means for raising and lowering the carrier.

1,872,312. INK MIXER. Frank C. Marquardt, Brooklyn, N. Y., assignor to American Bank Note Company, New York, N. Y., a Corporation of New York. Filed Dec. 19, 1930. Serial No. 503,381. 2 Claims. (Cl. 259—85.)

1. An ink mixer embodying therein a turn-table adapted to receive a tub or can, a bevel gear carried thereby having a pitch determined by the axis of rotation of the turntable, vertically extending guideways, a vertically extending rack adjacent the guideways, a paddle head slidably mounted in the guideways, a gear wheel carried thereby cooperating with the rack, a holdback mechanism operative upon the gear, means whereby the gear may be turned, a shaft rotatably mounted in the head, the axis which is eccentric to the axis of the turn-table, a plate carried by the shaft, a plurality of paddle blades carried by the plate and of a length to reach closely adjacent the bottom of a tub or can upon the turn-table, a bevel gear carried by the shaft of a relatively smaller diameter than the bevel gear carried by the turn-table, the pitch of the gear being determined by the axis of rotation of the plate, a shaft, a plurality of bevel gears carried thereby and enmeshed respectively with the gear carried by the turntable, and with the gear carried by the shaft, the pitch of the gear enmeshed with the gear carried by the turntable being determined by the axis of rotation of the turn-table, and the pitch of the other of the gears being determined by the axis of rotation of the paddles, and speed reducing gearing operative upon the shaft.

1,872,421. RULING AND PRINTING MACHINE. Edward D. Doyle, Kansas City, Mo. Filed July 2, 1930. Serial No. 465,347. 13 Claims. (Cl. 101—247.)

1. In a combined printing and ruling apparatus, an impression cylinder, a form cylinder a pen beam having a plurality of ruling pens and means for receiving and holding a sheet of paper upon the impression cylinder as it is rotated, the form cylinder and ruling pens acting upon the paper to print and rule the same as it is being carried by the impression cylinder.

1,872,572. METHOD OF PRODUCTION PRINTING PLATE BLOCKS. Horace W. Hacker, La Grange, Ill. Filed Apr. 20, 1931. Serial No. 531,535. 2 Claims. (Cl. 101—382.)

2. The method of producing mounting blocks for printing plates which consists in forming a wood slab of less thickness than the required blocks, cementing metal sheets to opposite faces of the slab to produce block stock of the required thickness and to hermetically seal said faces of the slab against atmospheric contact, and then cutting the stock thus formed into blocks of desired size.

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Dependable, uniform quality, day in and day out, together with cheerful service maintains the steady increase in distribution enjoyed by BURGESS CHROME MATS

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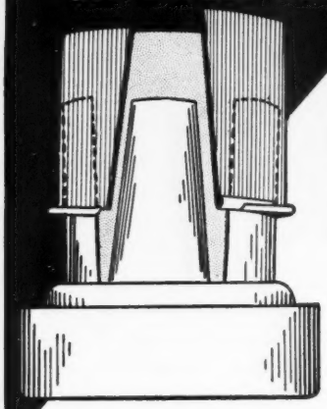

It protects the ¼" to ½" of paper on the inside of your rolls that is frequently damaged and wasted by conical or wedge-shaped chucks. Oneida Chucks make it possible to use stock wound on inexpensive, non-returnable spiral or straight wound cores, or on rolls without cores. Insures tight, steady grip and permits running down roll to last thickness of paper. Saves entire expense of "core account."

Write for Our Circular "E"

It describes the Oneida Chuck in detail and explains advantages and economies for shipper and user of paper in the roll. Tell us diameter of your arbor and inside of paper core or roll for specific information. No obligation.

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Rebuilding Your Linotype Machines—

Fall is here—and with it comes the need to put many machines in first-class shape for the seasonal pick-up in business.

You will want your parts replacement cost to be as low as possible, that is where "Star" parts come in.

Savings range from 15% to 50% with satisfaction guaranteed.

And quite a number of parts which ordinarily would have to be replaced, we can rebuild.

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Doing Special Work For Lanston Monotype

John J. Meadth has been elected to the presidency of the Monotype Company of Canada, Ltd., Toronto, and appointed assistant to the president of the Lanston Monotype Machine Company, Philadelphia. Before Mr. Meadth, who is a practical printer and Monotype operator, went to Toronto in March, 1927, to assume charge of the Canadian Company, he had been for several years a member of the sales staff of the Chicago District Office of the Lanston Company. He is now doing some special work for the Lanston Company in the United States. During his absence the Toronto office is under the care of Harry Mounstephen, recently appointed assistant to Mr. Meadth.

Handling Newsprint

(Continued from page 11)

Plants using all-paper or "non-returnable" cores can improve press performance and reduce core waste by installing chucks especially made for this type of core. There are several excellent makes. They do not depend, as do ordinary chucks, on a wedge action of a taper construction, or on a key, to control a roll. They extend about 6 in. into a core and are then expanded to grip the roll. They neither split the core nor damage the paper wound next to the cores. Executives of several publications claim that they can run to the last layer of paper when using these special chucks. They cost from $15 to $30 a pair.

Fig. 14

It is customary in most pressrooms to inspect all rolls for cuts on the ends so that they can either be removed or notched. Many press breaks can be avoided if this inspection is extended to looking for glue on the edges of rolls, or bruises that may indicate broken plies, or anything that might cause the web to break while running. In spite of every precaution taken by mills, glue will seep through occasionally when wrappers are being put on. However, it can be washed off easily with a wet rag.

The practice of notching and "stopping," instead of tear-

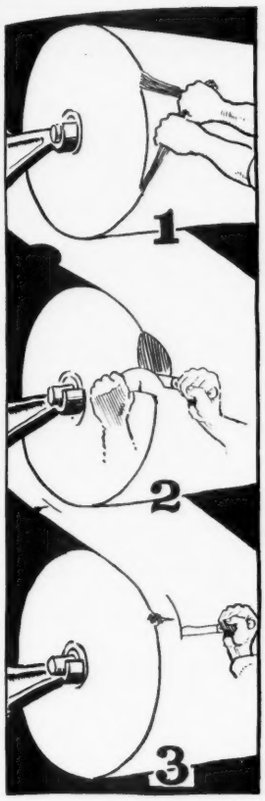

Fig. 15

ing off and throwing away, that part of rolls having broken edges, has probably done more than anything else to lower newsprint waste in the pressroom.

THREE WAYS OF HANDLING BROKEN EDGES

The general rules for notching and "stopping" seem to be:

That no rolls for the first page or editorial page should be notched or "stopped."

Pages should not be printed with tears in them deep enough to interfere with advertisements. Two inches seems to be the generally accepted limit. Rolls with longer cuts are stripped (*1*, Fig. 15) until the cut is down to the accepted maximum length, and are then "stopped" as shown at *2*, Fig. 15.

At *2*, Fig. 15, it is shown how small nicks, that are not long enough to go into the type page are notched or cut out. The margin of the pages governs the length of the cuts which can be notched.

Cuts too long to be notched, and not over 2 in. long, should be "stopped" as shown at *3*, Fig. 15. Make a semi-circular cut as deep into the roll as the break penetrates. The knife cut should be made about ¼ in. from the break.

As a further precaution for preventing torn edges from breaking the web while running, dampen the roll at all points after the torn edges have been notched or "stopped."

To be Continued

Instantaneous Three-Color Photography

(Continued from page 15)

chandise changing its physical appearance or in the case of a human figure, changing its position, was very great, because of the time it took to adjust each color filter and negatives to make each exposure. This danger is easily seen when a perishable product, such as chocolate candy is being photographed under studio lights. By the time the last exposure is made, the candy may have become softened, and will in no way resemble the appetizing delicacy it was when the first exposure was made. This meant that it was necessary for the model to remain in one position during the entire length of time it took to expose three color-separation negatives. This is extremely difficult, if not actually impossible. Even so slight a motion as drawing the breath may cause the negative to be out of register. For this same reason, outdoor scenes of trees and flowers are difficult to photograph, because a slight breeze may cause the subjects to move.

Craftsmen in the graphic arts undertook to find a solution of these perplexing problems. Ultimately, their researches led them to foreign countries, and finally their efforts were rewarded by the discovery of an ingeniously constructed camera from France. The equipment consisted of a single lens and a combination of color filters that engage the phe-

CUTS CAN BE MOUNTED SUCCESSFULLY TO BASES WITH

Cut Mounting Tissue

- Many plants are now using Cut Mounting Tissue to attach cuts to both stereotype metal and wood bases, particularly small cuts. Cut Mounting Tissue holds the cut securely in place during moulding and for runs as high as 5000 on flat-bed presses. Cut Mounting Tissue can also be used to splice paper.

The process is simple and rapid. The Tissue is cut a little smaller than the cut and placed on the base, the heated cut is placed over the Tissue and pressed firmly over the base. It sets immediately on cooling and is then ready for use.

We are prepared to supply Diamond B Cut Mounting Tissue in various sizes and weights.

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Monarch Monometer
RE-MELTING FURNACE Operated with Electricity Gas or Oil

THE Monometer is scientifically constructed. It has an automatic heat control—prevents burning of metal—uses less gas—eliminates harmful fumes—retains tin—and reduces dross to a minimum.

Improved Metal—Reduced Dross—Saving in Fuel

THE saving in fuel and dross will pay cost of Monometer in one year. It is built to last a lifetime.

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Works, Curtis Bay, Md.

nomena of color selection and reflection, to produce at one exposure three color-separation negatives *simultaneously*.

"Two-color filters (blue and red) are so placed inside the camera that they separate each of the primary colors, and, at the same time reflect the image of the subject being photographed, so that its image is shunted in three directions to reach each of the three negatives already in place. In other words, when an exposure is made, the various colors in the merchandise pass through the lens and meet the first filter, which allows nothing but the blue to pass through to a negative directly back of this filter. Because it is placed at an angle, this first filter acts as a mirror, so that after the blue color has passed through, the image of the merchandise is reflected on to the red filter, which allows only the red rays to pass through to another negative placed directly back of this second filter. This red filter, in turn, also acts as a mirror and reflects the image once more directly on to a negative which has been sensitized and, consequently, needs no filter. Another reason the last negative requires no filter is that after the blue and red colors have been filtered out, the only color left in the image is the yellow.

"Thus it is easily seen how this camera obviates any danger of misregister, due to changes in position or outward appearance of the subject while it is being photographed. To obtain three color-separation negatives with this camera takes but one exposure, which is made in a fraction of a minute. This fraction reduces the time it usually takes to make one direct-color photograph about one-third. In addition to its remarkable speed, the camera's other distinct advantages are: It enlarges the field of color photography to include many heretofore impossible subjects, and it minimizes retakes. Color printing plates produced from negatives, through the use of the instantaneous three-color camera, possess a life-like attractiveness and detail, which has been the goal of advertisers for many years. Without a doubt, perfection of this camera is one of the most significant developments in photography ever achieved."

Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

The Waste Bronze Problem Solved—Four-page bulletin on the economies to be effected through reclaiming bronze powders which would otherwise be useless. A practical example of its efficiency is given in the bulletin.

Here's a Safety Ladle—Folder illustrating and describing a safety ladle for use in pouring molten metal.

Employees' Suggestion System—Booklet, 24 pages, 8 in. by 10¾ in. A thorough analysis, demonstrating the working plans for a system and rewards encouraging employees to submit suggestions for savings in operating costs, increased production, extension of business, improved operating methods and better working conditions.

Squirrel-Cage Motors—Bulletin illustrating and describing line of motors adaptable to widely varying duties together with suitable controls for the motors.

Printers Cheat Selves on Trade-In Allowances—Booklet setting forth a working plan to deal with the problem of over-equipment of obsolete machinery in the printing industry.

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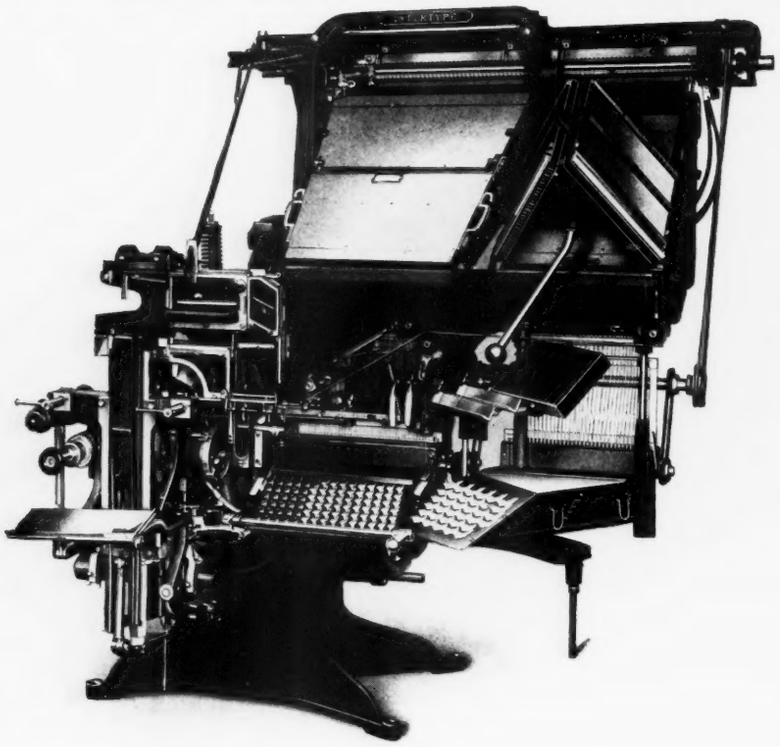
GENERAL AGENTS:—GOSS PRINTING PRESS CO., Chicago; South America, National Paper & Type Co., New York; Canada, the Toronto Type Foundry Co., Ltd., Toronto, Canada; England, France, and Germany, Goss Printing Press Co., Ltd., London, England.

THE 72-90 CHANNEL INTERTYPE MIXER



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[1] A new extra-wide display magazine — 72 channels — two inches wider than formerly and accommodating larger matrices —including full-width 30 point faces and condensed 36 point and larger — in complete 72-character fonts of caps, lowercase, figures, and points.

[2] A standard 90-channel magazine for full-speed straight composition in all sizes up to and including 18 point and some 24 point condensed faces.

[3] Both magazines operate direct from one standard 90-character keyboard.

[4] Time-saving Mixer advantages. *No waiting for the distributor.* Instant flip-of-a-finger changes from one face to another

[5] Simplicity of design. In changing from a 72 to a 90-channel magazine, or vice versa, the magazines do not move. Neither does the assembler front, nor the distributor bars, nor the channel entrances.

[6] Two and four-magazine side units (mixer units) are available for this machine. The above picture shows a six-magazine Model G—two main magazines and four side magazines.

Write nearest Intertype office.

INTERTYPE CORPORATION, 360 Furman Street, Brooklyn, N. Y.

Chicago, 130 North Franklin Street; New Orleans, 816 Howard Avenue; San Francisco, 152 Fremont Street; Los Angeles, 1220 South Maple Avenue; Boston, 80 Federal Street; Canada, Toronto Type Foundry Co. Ltd., Toronto. Distributors Throughout the World

Set in Bodoni Bold, Vogue and Vogue Extra Bold

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of Equipment for Setti
[1] Text, [2] Display, a
[3] Mixed Composition on
MODEL G-4 S. M.

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ABCabcdefghijkl
ABCabcdefg
ABCabcdef
ABabcd

ABCDEFG abcdefghijklmnopqrst
ABCDEFG abcdefghijklmnopqrst
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